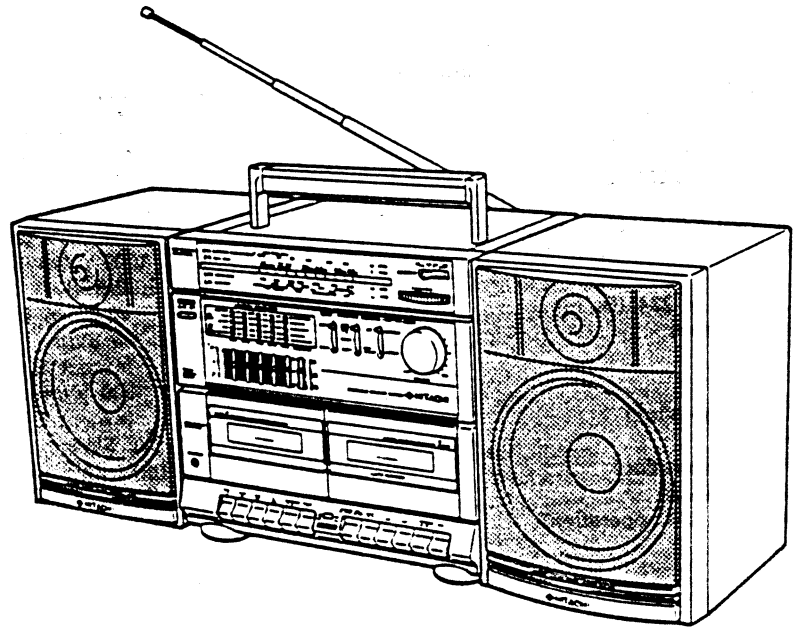
# HITACHI
# SERVICE MANUAL

| TY | No. 624 EF |
|---|---|

## MS-W560
[ H, HC, E, E(BS), W, W(UN), W(AU) ]

TN-521ZSW-182

Neckermann
545/384



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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

# PORTABLE COMPONENT SYSTEM

July 1989 YOKOHAMA WORKS 2564

## SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with ⚠ in the circuit diagram and printed wiring board.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

# *SPECIFICATIONS*

### • GENERAL

| | |
|---|---|
| **Power supply** | AC : 120V, 60 Hz [for H, HC]<br>AC : 220V, 50 Hz [for E]<br>AC : 240V, 50 Hz [for E(BS)]<br>AC : 110–127/200–220/230–250V, 50/60 Hz [for W, W(UN), W(AU)]<br>DC : 15V [IEC R20 ("D"CELL) x 10 or equivalent] |
| **Power consumption** | 45W |
| **Dimensions** | 661 (W) x 265 (H) x 234 (D) mm |
| **Weight** | 8.7 kg (with batteries) |

### • AMPLIFIER SECTION

| | |
|---|---|
| **Audio output** | 80W P.M.P (AC operation) [for E, E(BS)]<br>150W P.M.P (AC operation) [for W, W(UN), W(AU)]<br>8W/CH (10% T.H.D. AC operation) |
| **Speakers** | 16cm, 4Ω (x2)<br>5cm, 4Ω (x2) |

### • TUNER SECTION

| | |
|---|---|
| **Circuit system** | FM/SW/MW/LW-4bands superheterodyne [for E, E(BS)]<br>FM/SW2/SW1/MW(AM)-4bands superheterodyne [except E, E(BS)] |
| **Tuning range** | FM : 88 to 108 MHz [except E, E(BS)]<br>FM : 87.5 to 108 MHz [for E, E(BS)]<br>SW: 6 to 18 MHz [for E, E(BS)]<br>SW2 : 7 to 22 MHz [except E, E(BS)]<br>SW1 : 2.3 to 7 MHz [except E, E(BS)]<br>MW(AM) : 530 to 1,605 kHz<br>LW : 150 to 285 kHz [for E, E(BS)] |
| **Intermediate** | FM : 10.7MHz<br>SW/MW/LW : 465kHz [for E, E(BS)]<br>SW2/SW1/MW(AM) : 455kHz [except E, E(BS)] |
| **Sensitivity** | FM 8 µV (S/N 26 dB)<br>AM (MW) 900 µV/m (S/N 20 dB)<br>LW 1000 µV/m (S/N 20 dB) [for E, E(BS)]<br>SW 40 µV/m [for E, E(BS)]<br>SW2 40 µV/m [except E, E(BS)]<br>SW1 300 µV/m [except E, E(BS)] |
| **Antennas** | FM SW SW2:<br>Telescopic antenna (aerial)<br>AM (MW/LW/SW1) :<br>Ferrite core antenna |

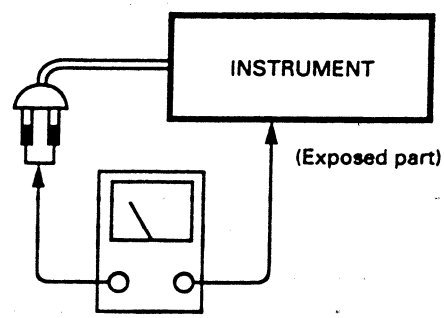
### • TAPE DECK SECTION

| | |
|---|---|
| **Tape** | Compact cassette |
| **Tape speed** | 4.75 cm/s |
| **Recording system and Bias frequency** | AC bias, 85 kHz |
| **Track system** | 4 tracks stereo |
| **Erasing system** | AC erase |
| **Frequency Response** | Normal 70–12,000 Hz<br>CrO2 70–14,000 Hz |
| **Signal to noise ratio** | 50 dB |
| **Crosstalk** | Between Track 60 dB<br>Between Channel 40 dB |
| **Erase ratio** | 65 dB |
| **Motor** | DC motor |
| **Wow and Flutter** | 0.25% (WRMS) |

* Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Claims for Amplifiers.

Check that exposed parts are acceptably insulated from the supply circuit before returning the instrument repaired to the customer.

- **Checking method**
  Operate switch is set to ON.
  Next, measure the resistance value between the both poles of attachment cup (Power supply plug) and the exposed parts (Parts such as Knob, Cover, etc. where the customer is easy to touch.) and check that the resistance value is 500 kohms or more.




Insulation tester (DC 500V)

## PRÉCAUTIONS DE SÉCURITÉ

Les précautions suivantes doivent être observées chaque fois qu'une réparation doit être faite.

1. Etant donné que de nombreux composants de l'appareil possèdent des caractéristiques relatives à la sécurité, utiliser uniquement des pièces de rechange d'origine Hitachi pour effectuer un remplacement. Ceci se rapporte notamment aux pièces critiques du bloc d'alimentation qui ne doivent en aucun cas être remplacées par celles d'autres fabricants. Les pièces critiques sont accompagnés du symbole ⚠ dans le plan de circuit et sur le plan de base.
2. Avant de retourner l'appareil répare au client le technicien doit procéder à un essai complet pour s'assurer qu'il ne présente aucun danger de chocs électriques.

# *CARACTÉRISTIQUE TEQUNIQUES*

### • GÉNÉRAL

| | |
|---|---|
| **Alimentation** | CA : 120V, 60 Hz [pour H, HC]<br>CA : 220V, 50 Hz [pour E]<br>CA : 240V, 50 Hz [pour E(BS)<br>CA : 110–127/200–220/230–250V, 50/60 Hz<br>[pour W, W(UN), W(AU)]<br>Courant continu : 15V [10 piles IEC R20 (pile "D") ou des piles équivalentes] |
| **Consommation électrique** | 45W |
| **Dimensions** | 661 (L) x 265 (H) x 234 (P) mm |
| **Poids** | 8,7 kg (piles comprises) |

### • SECTION AMPLIFICATEUR

| | |
|---|---|
| **Sortie audio** | 80W PMP (fonctionnement sur le secteur) [pour E, E(BS)]<br>150W PMP (fonctionnement sur le secteur) [pour W,W(UN) W(AU)]<br>8W/canal (CA à 10% D.H.T.)<br>[pour E, E(BS)] |
| **Haut-parleurs** | 16cm, 4Ω(x2)<br>5cm, 4Ω(x2) |

### • SECTION TUNER

| | |
|---|---|
| **Systéme de circuit** | 4 gammes d'ondes FM/OC/PO/GO à superhétérodyne [pour E, E(BS)]<br>4 gammes d'ondes FM/OC2/OC1/PO(AM) à superhétérodyne<br>[sauf E, E(BS)] |
| **Gammes d'accord** | FM : De 88 à 108 MHz<br>[sauf E, E(BS)]<br>FM : De 87,5 à 108 MHz<br>[pour E, E(BS)]<br>OC : De 6 à 18 MHz<br>[pour E, E(BS)]<br>OC2 : De 7 à 22 MHz<br>[sauf E, E(BS)]<br>OC1 : De 2,3 à 7 MHz<br>[sauf E, E(BS)]<br>PO(AM) : De 530 à 1605 kHz<br>GO : De 150 à 285 kHz<br>[pour E, E(BS)] |
| **Fréquence intermédiaire** | FM : 10.7 MHz<br>OC/PO/GO : 465kHz [pour E, E(BS)]<br>OC2/OC1/PO(AM) : 455 kHz<br>[sauf E, E(BS)] |
| **Sensibilité** | MF 8 µV (S/B 26 dB)<br>AM (PO) 900 µV/m (S/B 20 dB)<br>GO 1000 µV/m (S/B 20 dB)<br>[pour E, E(BS)]<br>OC 40 µV/m [pour E, E(BS)]<br>OC2 40 µV/m<br>[sauf E, E(BS)]<br>OC1 300 µV/m[<br>[sauf E, E(BS)] |
| **Antenne** | MF OC OC2 :<br>Antenne télescopique (aérien)<br>AM (PO/GO/OC1) :<br>Antenne tore de ferrite |

### • SECTION MAGNETOCASSETTE

| | |
|---|---|
| **Bande** | Compact cassette |
| **Vitesse de défilement** | 4,75 cm/s |
| **Système d'enregistrement/fréquence de polarisation** | Polarisation CA, 85 kHz |
| **Système de piste** | 4 pistes stéréo |
| **Système d'effacement** | Effacement CA |
| **Frequency Response** | Normal 70–12000 Hz<br>$CrO_2$ 70—14000 Hz |
| **Rapport signal/bruit** | 50 dB |
| **Transmodulation** | Entre les pistes 60 dB<br>Entre les canaux 40 dB |
| **Taux d'effacement** | 65 dB |
| **Moteur** | DC motor |
| **Pleurage et scintillement** | 0,25% (watts effic.) |

* Mesures conformes aux réglements commerciaux de la Federal Trade Commission relatifs à la puissance de sortie des amplificateurs.

# *MAINTENANCE*

**■ Clean cabinet and panels when dirty**

Clean off dirt on the surfaces with a dry cloth. Never use thinners, benzene or alcohol since these will damage the surface finish.

# *ENTRETIEN*

**■ Nettoyage du coffret et des panneaux lorsqu'ils sont sales**

Enlever la poussière des surfaces de l'appareil avec un chiffon sec. Ne jamais utiliser de solvants, de benzine ou d'alcool car ils abîmeraient le fini des surfaces.

## DISASSEMBLY

1. **Detaching the Speakers from the Unit**
   Push the speaker latch towards the center of the unit and pull the speaker box vertically upwards. (Fig. 1)

2. **Removing the Rear Case Assembly**
   Remove the five screws ① and the screw ②. Pull off Mic VR knob. Pull the front case assembly forward slightly to separate it from the rear case. Disconnect the connector Ⓐ. (Fig. 2)

3. **Removing the Printed Circuit Board M**
   Remove the screw ③ and pull off the REC lever. Disconnect the four connectors Ⓑ and pull off the Volume knob. Remove the screw ④ holding the heat-dispersion fin. Remove the screw ⑤ holding the dial holder. The printed circuit board M is now free. When removing the printed circuit board M , take care not to damage the connector Ⓒ which connects it to the printed circuit board GE. (Fig. 3)

4. **Removing the Printed Circuit Board GE**
   Remove the two screws ⑥. The printed circuit board GE can now be removed. (Fig. 3)

5. **Removing the Power Supply Printed Circuit Board**
   Remove the two screws ⑦ and four screws ⑧ and disconnect the connector Ⓓ. Pull the power supply printed circuit board and shield plate assembly forwards out of the case. (Fig. 4)

6. **Removing the Mechanical Deck Assemblies**
   Remove the four connectors Ⓔ from the printed circuit board M. Open the cassette doors and remove the six screws ⑨. Remove the counter bracket fixing screw ⑩. Remove the deck chassis. (Fig. 5)
   *Remove the printed circuit board H/P: the part of the printed circuit board M which is supported by the deck chassis.

7. **Removing the Damper Assembly**
   Remove the screw ⑪ from each damper assembly and remove the assembly. (Fig. 6)

8. **Removing the Rod Antenna**
   Remove the screw ⑫ and pull out the rod antenna. (Fig. 7)

9. **Removing the Carrying Handle**
   Push the lock ribs in the rear case outwards. Each end of the carrying handle can be removed by pulling it towards the rear. (Fig. 7)

10. **Removing the Speakers**
    Remove the four screws ⑬ and remove the rear case of the speaker unit.
    Remove the four screws ⑭ and two screws ⑮ and the speakers can be removed.
    Follow the same procedure for the left and right speaker units. (Fig. 8)

## DÉMONTAGE

1. **Dépose des haut-parleurs de l'appareil**
   Enfoncer le verrou de haut-parleur vers le centre de l'appareil, et tirer l'enceinte verticalement vers le haut. (Fig. 1)

2. **Dépose de l'ensemble du boîtier arriére**
   Retirer les cinq vis ① et la vis ②. Enlever VR bouton du micro en tirant dessus. Tirer l'ensemble du boîtier avant vers l'avant, afin de le séparer légérement du boîtier arriére. Débrancher le connecteur Ⓐ. (Fig. 2)

3. **Dépose de la plaquette de circuit imprimé M**
   Retirer la vis ③ et enlever le levier d'enregistrement (REC) en tirant. Débrancher les quatre connecteurs Ⓑ et enlever le bouton du volume en le tirant. Retirer la vis ④ retenant l'silette de dissipation thermique. Retirer la vis ⑤ retenant la support de cadran. La plaquette de circuit imprimé M est ainsi libérée. Lors du retrait de la plaquette de circuit imprimé M, prendre soin de ne pas endommager le connecteur Ⓒ qui la raccorde à la plaquette de circuit imprimé GE. (Fig. 3)

4. **Dépose de la plaquette de circuit imprimé GE**
   Retirer les deux vis ⑥. La plaquette de circuit imprimé GE peut alors être déposée. (Fig. 3)

5. **Dépose de la plaquette de circuit imprimé d'alimentation**
Retirer les deux vis ⑦ et les quatre vis ⑧, puis débrancher le connecteur Ⓓ. Tirer la plaquette de circuit imprimé d'alimentation et l'ensemble plaque de blindage vers l'avant, pour les sortir du boîtier. (Fig. 4)

6. **Dépose de ensembles de platine mécanique**
Débrancher les quatre connecteurs Ⓔ de la plaquette de circuit imprimé M. Ouvrir les trappes à cassette et enlever les six vis ⑨. Retirer la vis ⑩ d'assemblage de la support contraire. Déposer le châssis de platine. (Fig. 5)
*Déposer la plaquette de circuit imprimé H/P: la partie de la plaquette de circuit imprimé M qui est supportée par le châssis de platine.

7. **Dépose de l'ensemble amortisseur**
Retirer une vis ⑪ de chaque ensemble amortisseur, et déposer l'ensemble. (Fig. 6)

8. **Dépose du barreau d'antenne**
Retirer la vis ⑫ et enlever le barreau d'antenne en le tirant. (Fig. 7)

9. **Dépose de la poignée de transport**
Pousser les nervures de verrouillage du boîtier arriére vers l'extérieur.
Chaque extrémité de la poignées de transport peut être retirée en la tirant vers l'arriére. (Fig. 7)

10. **Dépose des haut-parleurs**
Retirer les quatre vis ⑬ et déposer le boîtier arriére de l'enceinte.
Retirer les quatre vis ⑭ et la deux vis ⑮ le haut-parleur peut alors être déposé.
Procéder de la même maniére pour les enceintes de gauche et de droite. (Fig. 8)

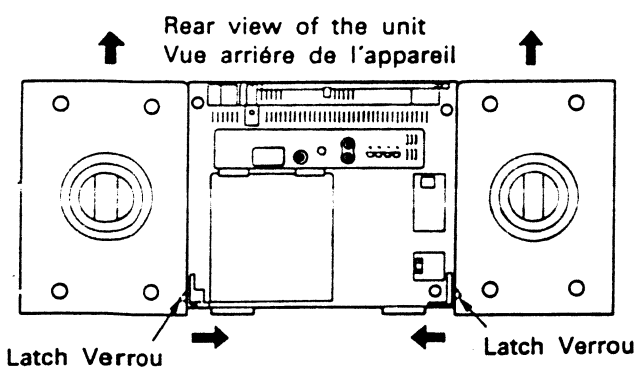



Fig. 1

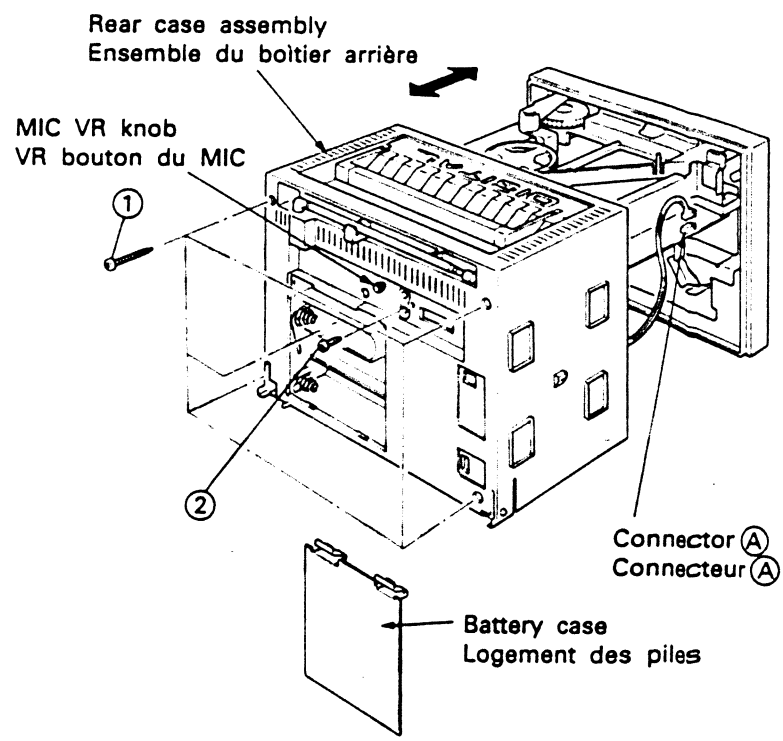



Fig. 2

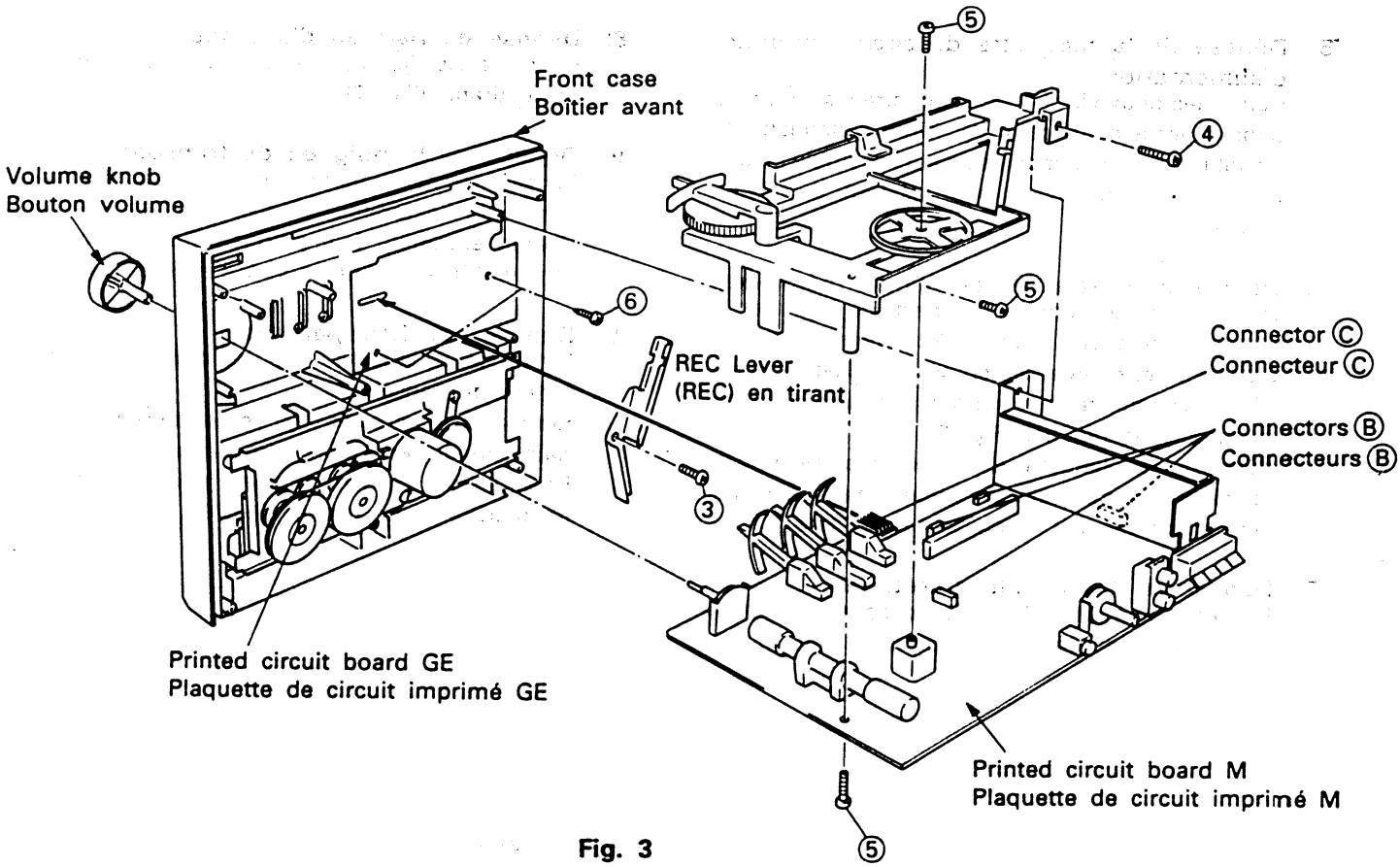

Front case
Boîtier avant
Volume knob
Bouton volume
REC Lever
(REC) en tirant
Connector Ⓒ
Connecteur Ⓒ
Connectors Ⓑ
Connecteurs Ⓑ
Printed circuit board GE
Plaquette de circuit imprimé GE
Printed circuit board M
Plaquette de circuit imprimé M

**Fig. 3**

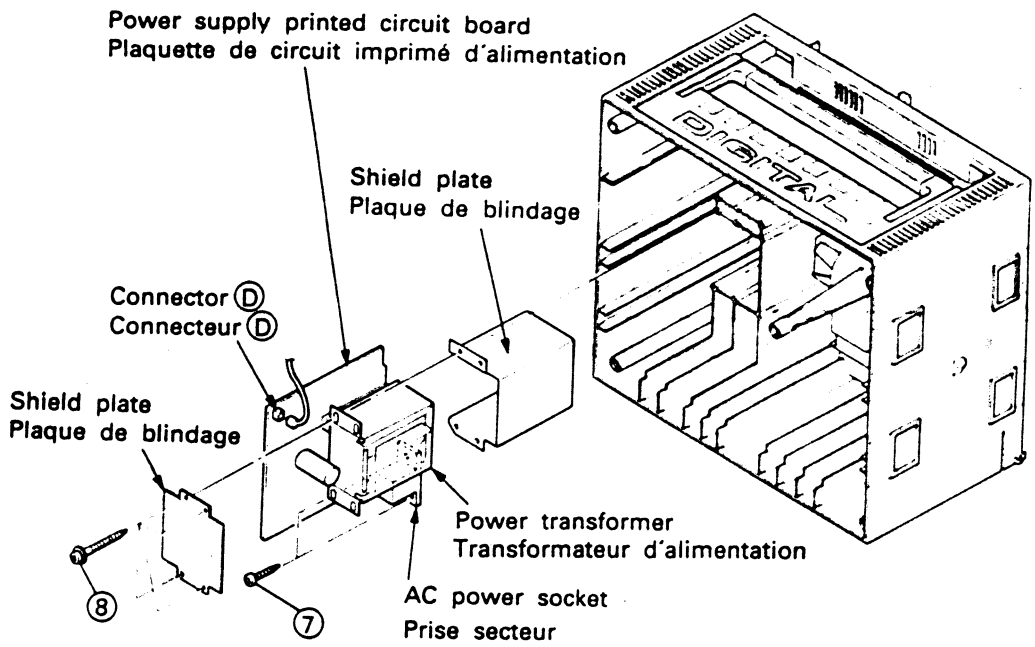

Power supply printed circuit board
Plaquette de circuit imprimé d'alimentation
Shield plate
Plaque de blindage
Connector Ⓓ
Connecteur Ⓓ
Shield plate
Plaque de blindage
Power transformer
Transformateur d'alimentation
AC power socket
Prise secteur

**Fig. 4**

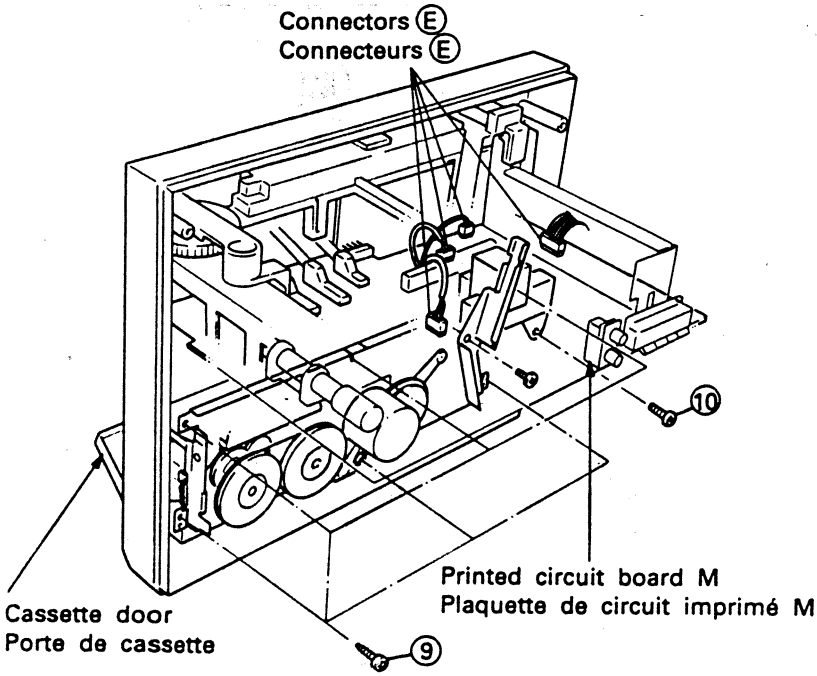



Fig. 5

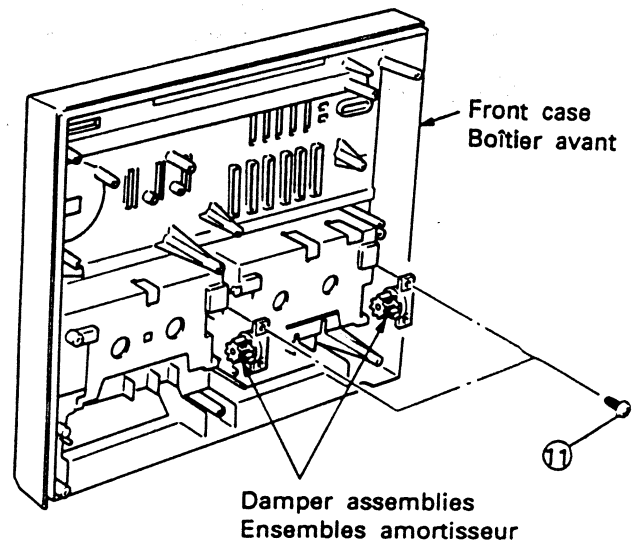



Fig. 6

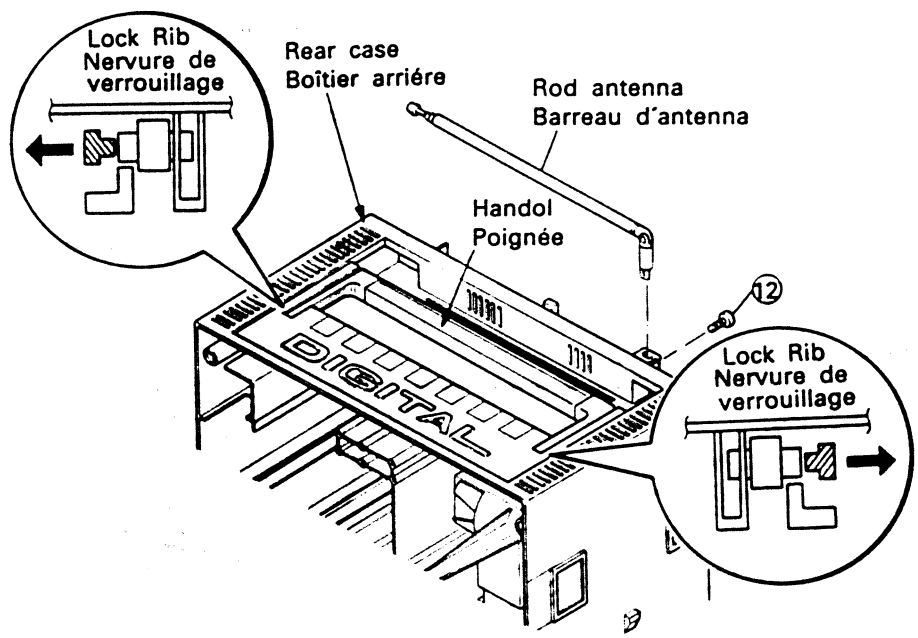



Fig. 7

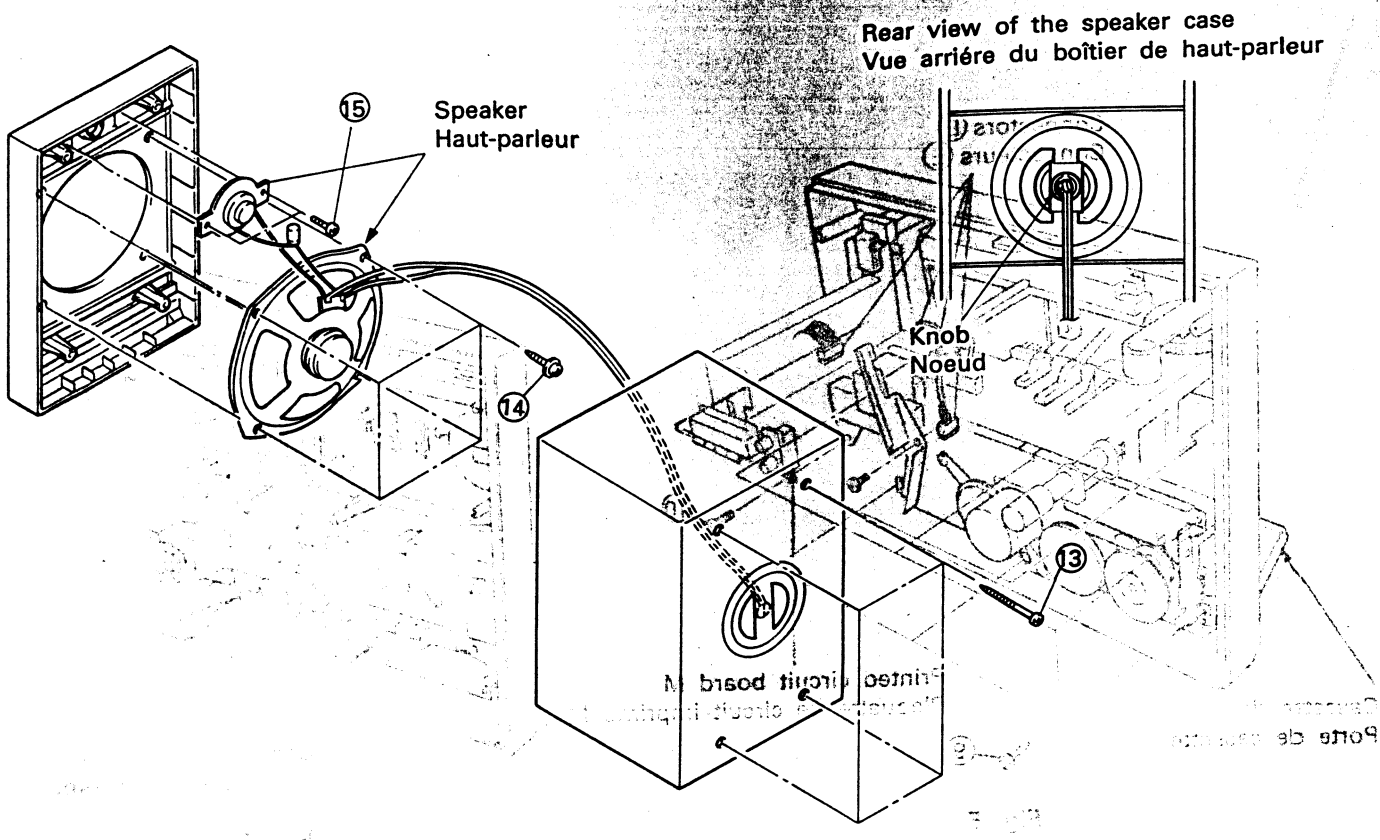



Fig. 8

## *DIAL CORD STRINGING*

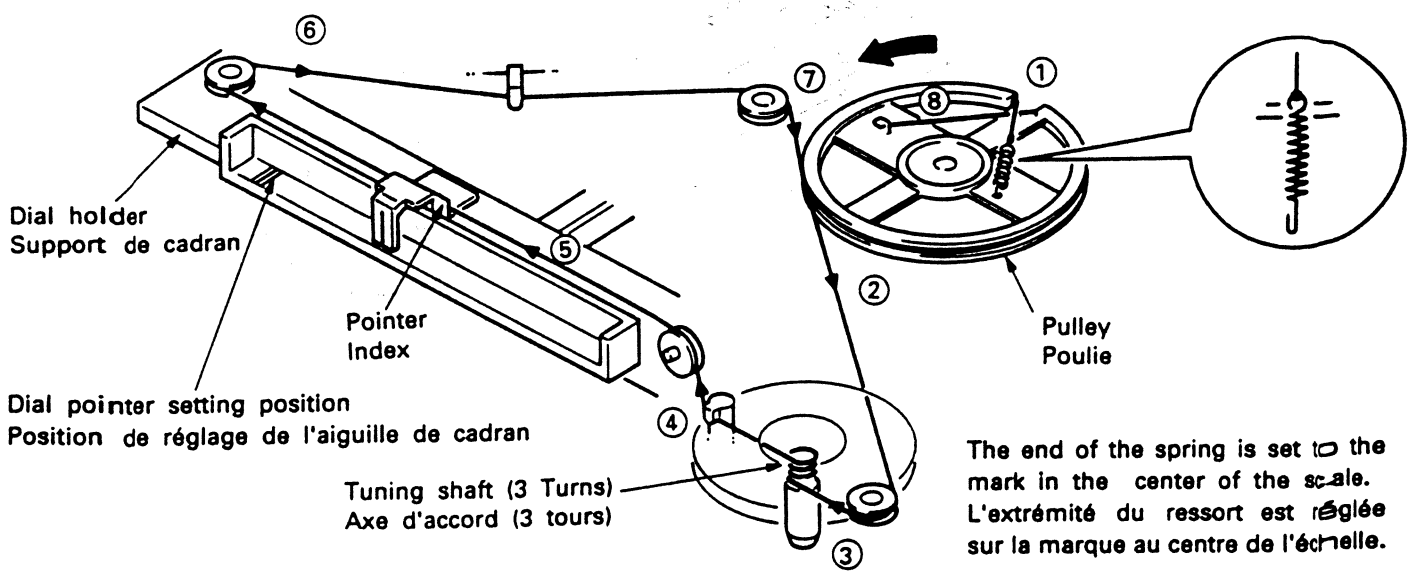
**Stringing method**

1. Turn the pulley fully anti-clockwise until it stop by the stopper on the dial holder.
2. String the dial cord in the direction of the arrows from (Nos. ①-⑧).
3. Set the dial pointer to setting position.

## *MISE EN PLACE DU CORDON DE CADRAN*

**Méthode d'enfilage**

1. Tourner la poulie à fond dans le sens contraire des aiguilles d'une montre avan que s'arrête à la position d'arrêter sur le support de cadran.
2. Enfiler le cordon de cadran dans le sens de la fléches d'une (No. ① à ⑧).
3. Amener l'aiguille du cadran sur la position de réglage.

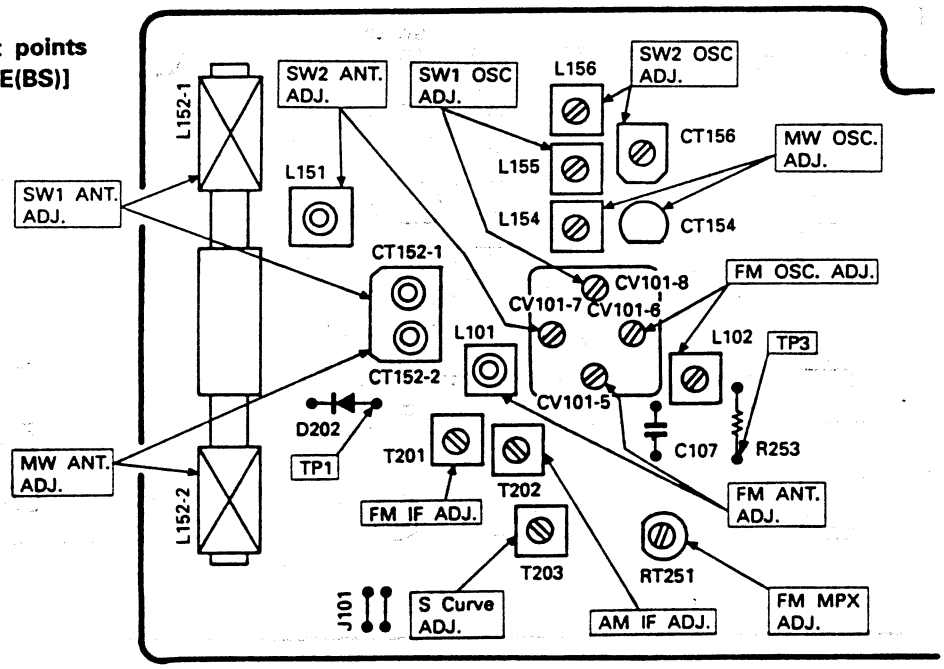


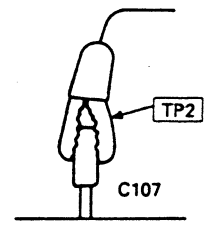

The end of the spring is set to the mark in the center of the scale.
L'extrémité du ressort est réglée sur la marque au centre de l'échelle.

# ADJUSTMENT

## 1. RADIO SECTION

- **Adjustment points [except E, E(BS)]**

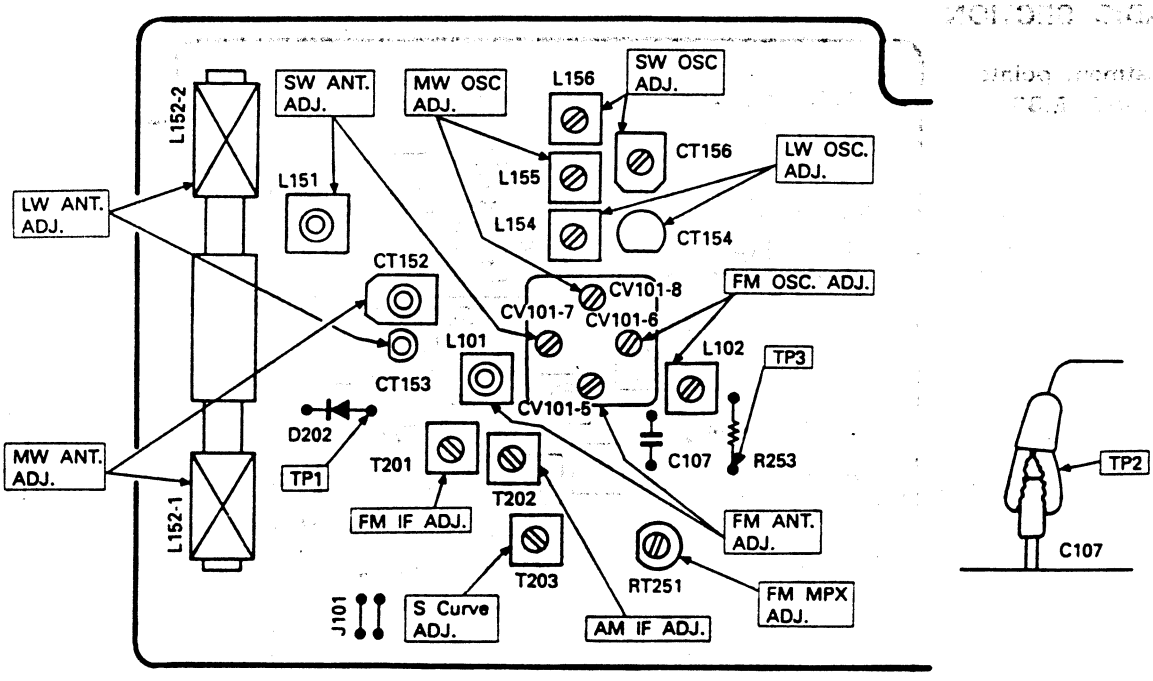



### (1)-1 AM Section except E, E(BS) (FM/SW2/SW1/MW 4-bands)

| Step | | Adjustment Item | Measuring Instrument and Connection | | | Genescope or Signal Generator Frequency | Dial Pointer Position | Adjust | Reading |
|---|---|---|---|---|---|---|---|---|---|
| | | | Measuring Instrument | Input Terminal | Output Terminal | | | | |
| 1 | (1) | AM IF | • Genescope (455 kHz) | Ferrite antenna (Note 3) | TP.3 | 455 kHz | Highest | T202 | (Note 1) |
| | (2) | | | | | Repeat Step (1) | | | |
| 2 | (1) | SW2 OSC. (Covering) | • AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope | TP.1 (through SW dummy antenna) (Note 2) | TP.3 | 6.7 MHz | Lowest | L156 | Max. |
| | (2) | | | | | 23 MHz | Highest | CT156 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 3 | (1) | SW2 ANT. (Tracking) | | | | 8 MHz | 8 MHz | L151 | Max. |
| | (2) | | | | | 20 MHz | 20 MHz | CV101-7 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 4 | (1) | SW1 OSC. (Covering) | • AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope | Ferrite antenna (Note 3) | TP.3 | 2.2 MHz | Lowest | L155 | Max. |
| | (2) | | | | | 7.3 MHz | Highest | CV101-8 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 5 | (1) | SW1 ANT. (Tracking) | | | | 2.7 MHz | 2.7 MHz | L152-1 | Max. |
| | (2) | | | | | 6.3 MHz | 6.3 MHz | CT152-1 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 6 | (1) | MW OSC. (Covering) | • AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope | Ferrite antenna (Note 3) | TP.3 | 515 kHz | Lowest | L154 | Max. |
| | (2) | | | | | 1,650 kHz | Highest | CT154 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 7 | (1) | MW ANT. (Tracking) | | | | 600 kHz | 600 kHz | L152-2 | Max. |
| | (2) | | | | | 1,400 kHz | 1,400 kHz | CT152-2 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |

• **Adjustment points [for E, E(BS)]**




## (1)-2 AM Section for E, E(BS) (FM/SW/MW/LW 4-bands)

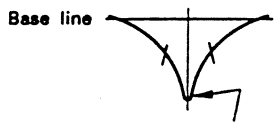
| Step | | Adjustment Item | Measuring Instrument and Connection | | | Genescope or Signal Generator Frequency | Dial Pointer Position | Adjust | Reading |
|---|---|---|---|---|---|---|---|---|---|
| | | | Measuring Instrument | Input Terminal | Output Terminal | | | | |
| 1 | (1) | AM IF | • Genescope (465 kHz) | Ferrite antenna (Note 3) | TP.3 | 465 kHz | Highest | T202 | (Note 1) |
| | (2) | | | | | Repeat Step (1) | | | |
| 2 | (1) | SW OSC. (Covering) | • AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope | TP.1 (through SW dummy antenna) (Note 2) | TP.3 | 5.8 MHz | Lowest | L156 | Max. |
| | (2) | | | | | 18.5 MHz | Highest | CT156 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 3 | (1) | SW ANT. (Tracking) | | | | 6.5 MHz | 6.5 MHz | L151 | Max. |
| | (2) | | | | | 16 MHz | 16 MHz | CV101-7 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 4 | (1) | MW OSC. (Covering) | • AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope | Ferrite antenna (Note 3) | TP.3 | 515 MHz | Lowest | L155 | Max. |
| | (2) | | | | | 1,650 MHz | Highest | CV101-8 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 5 | (1) | MW ANT. (Tracking) | | | | 600 MHz | 600 MHz | L152-1 | Max. |
| | (2) | | | | | 1,400 MHz | 1,400 MHz | CT152 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 6 | (1) | LW OSC. (Covering) | • AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope (RIF switch: B) | Ferrite antenna (Note 3) | TP.3 | 145 kHz | Lowest | L154 | Max. |
| | (2) | | | | | 290 kHz | Highest | CT154 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 7 | (1) | LW ANT. (Tracking) | | | | 160 kHz | 160 kHz | L152-2 | Max. |
| | (2) | | | | | 270 kHz | 270 kHz | CT153 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |

## (2)-1 FM Section

| Step | | Adjustment Item | Measuring Instrument and Connection | | | Genescope or Signal Generator Frequency | Dial Pointer Position | Adjust | Reading |
|---|---|---|---|---|---|---|---|---|---|
| | | | Measuring Instrument | Input Terminal | Output Terminal | | | | |
| 1 | (1) | FM IF | Turn T203 fully counterclockwise | | | 10.7 MHz | Highest | T201 | (Note 4) |
| | (2) | S-Curve | • Genescope (10.7 MHz) | TP.2 | TP.3 | | | T203 | (Note 5) |
| 2 | (1) | FM OSC. (Covering) | • FM signal generator (400 Hz, 30% dev.) • Oscilloscope • VTVM | TP.1 (through FM dummy antenna) (Note 6) | TP.3 | 87.3 MHz | Lowest | L102 | Max. |
| | (2) | | | | | 109MHz | Highest | CV101-6 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 3 | (1) | FM ANT. (Tracking) | | | | 90MHz | 90MHz | L101 | Max. |
| | (2) | | | | | 106 MHz | 106 MHz | CV101-5 | |
| | (3) | | | | | Repeat steps (1) and (2) | | | |
| 4 | (1) | FM MPX (Multiplex) | • Frequency counter | Connect a 10μF/25V electrolytic capacitor between the No.18 pin of IC201 and GND | No.11 pin of IC201 | — | — | RT251 | 76 kHz ± 100Hz (Note 7) |

Note:

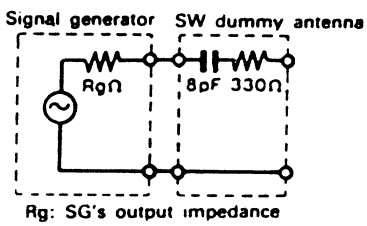
1. Feed in a weak signal from the genescope. Adjust T202 for maximum gain and the waveform of Fig. 9.




Adjust the genescope output so that there is a little noise riding on the leading edge.

**Fig. 9**

2. SW dummy antenna shows Fig. 10




Rg: SG's output impedance

**Fig. 10**

3. Connect AM signal generator to loop antenna, bring near to ferrite antenna.

4. Feed in a weak signal to TP.2 from the genescope. Adjust T201 for maximum gain and the waveform indicated in Fig. 11. If the center of the waveform cannot be lined up on the marker, adjust the right/left balance.

Adjust the genescope output so that there is a little noise riding on the leading edge.

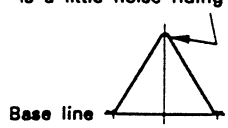



**Fig. 11**

5. Use the T203 core to form the S-curve shown in Fig. 12. Adjust the symmetry of A and B about point C for linearity.

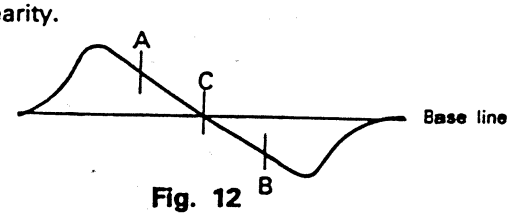
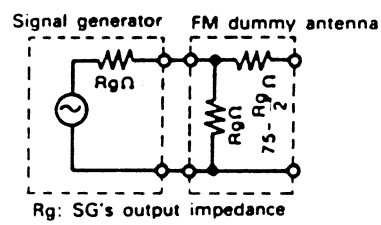



**Fig. 12**

6. FM dummy antenna shows Fig. 13




Rg: SG's output impedance

**Fig. 13**

7. Connect the frequency counter to the No. 11 pin of IC201 and connect a 220 kΩ resistor parallel with the frequency counter.

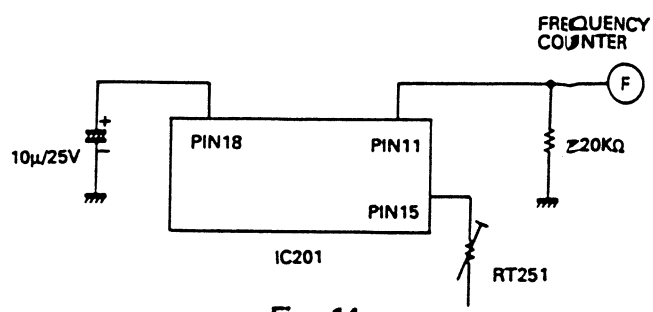



**Fig. 14**

## 2. TAPE RECORDER SECTION

Perform the following adjustments in the sequence stated after cleaning the head, pressure roller, and capstan with a head cleaning stick moistened in alcohol. (Note 1)

| Step | Adjustment Item | Measuring Instrument and Connection | | | Check Tape | Mode | Adjust | Reading |
|---|---|---|---|---|---|---|---|---|
| | | Measuring Instrument | Input Terminal | Output Terminal | | | | |
| 1 | Tape speed | • Frequency counter | — | Speaker terminal (4Ω load) | Tape speed adjustment tape (3kHz) | Playback (TAPE2) | RT501 | 3kHz±20Hz (Note 2) |
| 2 | Head azimuth | • VTVM | — | Speaker terminal (4Ω load) | Head azimuth adjustment tape (10kHz) | Playback | Azimuth adjusting screw | Output max. (Note 3) |

Note:

1. Adjust within 30 sec. after heat-running for more than 20 minutes.
2. Should be confirm at TAPE 1 both in the FORWARD and REVERSE directions if the reading is outside the range of adjustment value, make readjustment so that the reading would be 2,975 to 3,030 Hz both in the FORWARD and REVERSE directions.
3. When the maximum values of both channels are different, adjust to the maximum value of the L channel. In this case, the difference between the maximum values of both channels should be within 2 dB.

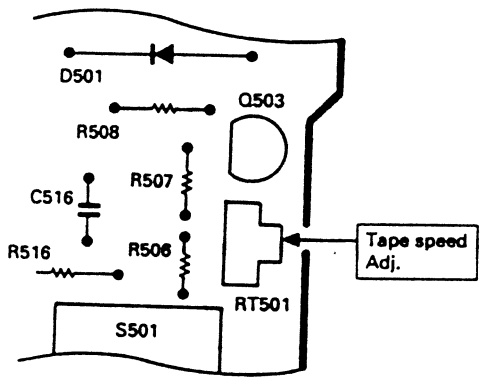



Fig. 15

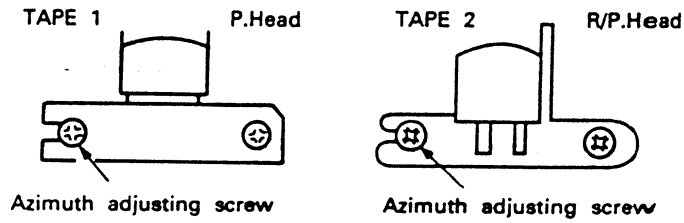



Fig. 16

## *INSPECTION OF MECHANISM*

| Item | Checking item | | Reference value | Remarks |
|---|---|---|---|---|
| 1 | Pressure of pressure roller | | 300–500 g | Note |
| 2 | Take-up torque | | 30–60 g·m | |
| 3 | Fast forward/Rewind torque | | 50 g·cm or more | |
| 4 | Auto-Stop sensor operation force | | 40–75 g | |
| 5 | Brake torque | | 15 g·cm or more | Measured in stop mode |
| 6 | Back tension torque | Take-up | 1–6 g·cm | |
| | | Supply | 1–4 g·cm | |
| 7 | Flywheel thrust gap | | 0.05–0.5 mm | |
| 8 | Button operation force | Play button | 1.8 kg or less | |
| | | FF button | 1.0 kg or less | |
| | | Rewind button | 1.4 kg or less | |
| | | Eject button | 1.0 kg or less | |
| | | Record button | 2.3 kg or less | |
| | | Pause button | 1.0 kg or less | |

**Note:**
Set this unit in the playback mode and press the pressure roller in the direction of the arrow using a fan type tension gauge, and measure the pressure when the pressure roller is released from the capstan.

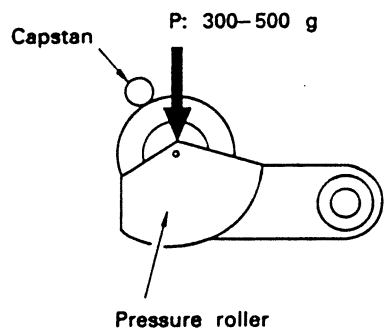
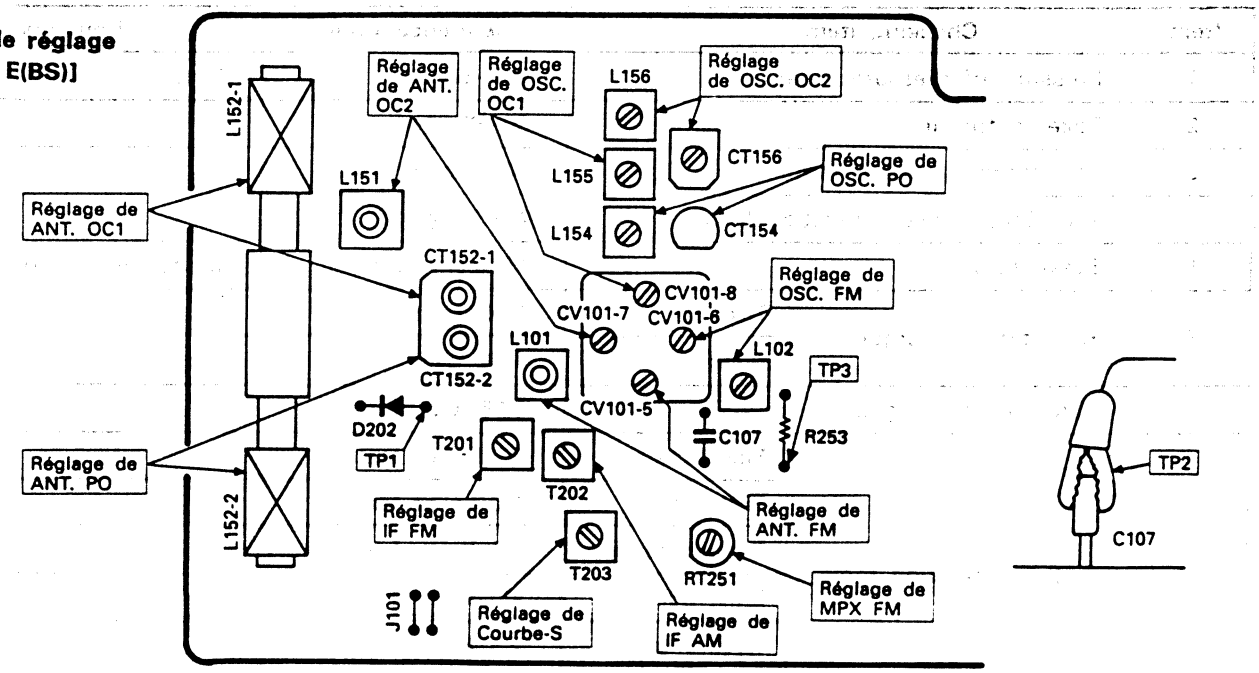



**Fig. 17**

## 1. SECTION RADIO

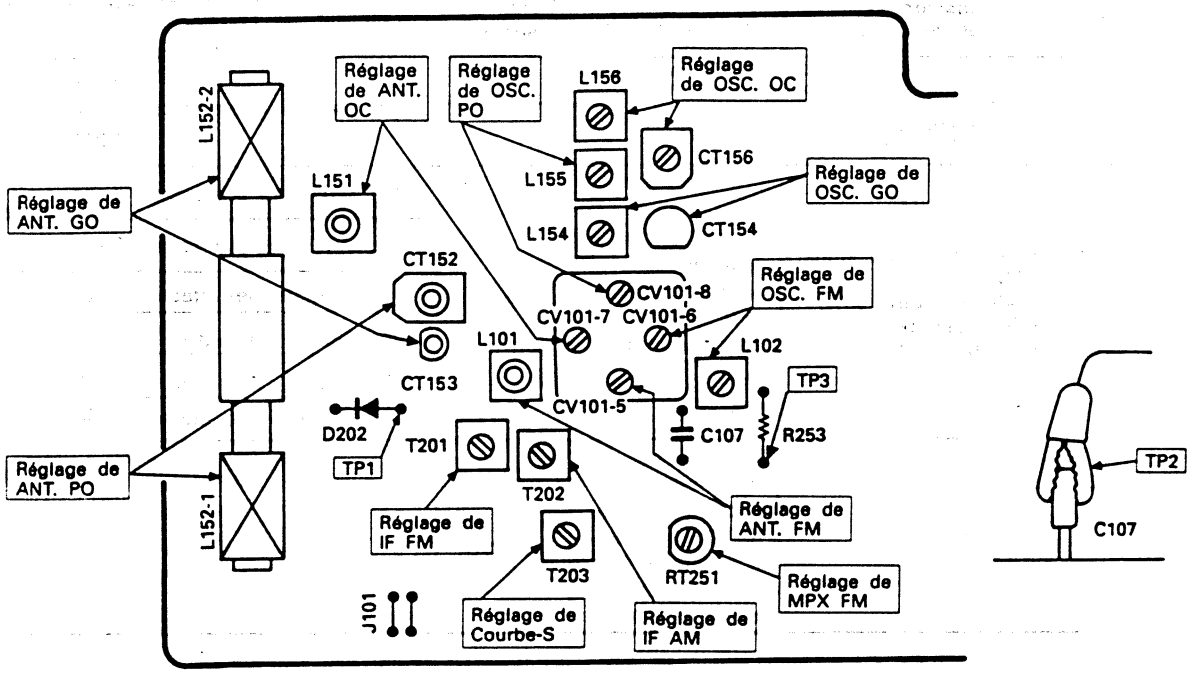
• **Points de réglage [sauf E, E(BS)]**




### (1)-1 Section AM sauf E, E(BS) (FM/OC2/OC1/PO 4 gammes)

| Etape | | Objet de réglage | Instrument de mesure et branchements | | | Généscope ou fréquence du générateur de signal | Position de l'aiguille du cadran | Réglage | Lecture |
|---|---|---|---|---|---|---|---|---|---|
| | | | Instrument de mesure | Borne d'entrée | Borne de sortie | | | | |
| 1 | (1) | IF AM | • Généscope (455 kHz) | Antenne noyau en ferrite (Remarque 3) | TP.3 | 455 kHz | La plus haute | T202 | (Remarque 1) |
| | (2) | | | | | Répéter étape (1) | | | |
| 2 | (1) | OSC. OC2 (coverture) | • Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope | TP.1 (par le biais d'une antenna OC fictive) (Remarque 2) | TP.3 | 6,7 MHz | La plus basse | L156 | Max. |
| | (2) | | | | | 23 MHz | La plus haute | CT156 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 3 | (1) | ANT. OC (poursuite) | | | | 8 MHz | 8 MHz | L151 | Max. |
| | (2) | | | | | 20 MHz | 20 MHz | CV101-7 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 4 | (1) | OSC. OC1 (coverture) | • Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope | Antenne noyau en ferrite (Remarque 3) | TP.3 | 2,2 MHz | La plus basse | L155 | Max. |
| | (2) | | | | | 7,3 MHz | La plus haute | CV101-8 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 5 | (1) | ANT. OC1 (poursuite) | | | | 2,7 MHz | 2,7 MHz | L152-1 | Max. |
| | (2) | | | | | 6,3 MHz | 6,3 MHz | CT152-1 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 6 | (1) | OSC. PO (coverture) | • Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope | Antenne noyau en ferrite (Remarque 3) | TP.3 | 515 kHz | La plus basse | L154 | Max. |
| | (2) | | | | | 1650 kHz | La plus haute | CT154 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 7 | (1) | ANT. PO (poursuite) | | | | 600 kHz | 600 kHz | L152-2 | Max. |
| | (2) | | | | | 1400 kHz | 1400 kHz | CT152-2 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |

• **Points de réglage**
**[pour E, E(BS)]**




## (1)-2 Section AM pour E, E(BS) (FM/OC/PO/GO 4 gammes)

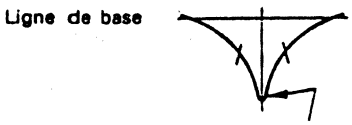
| Etape | | Objet de réglage | Instrument de mesure et branchements | | | Générateur ou fréquence du générateur de signal | Position de l'aiguille du cadran | Réglage | Lecture |
|---|---|---|---|---|---|---|---|---|---|
| | | | Instrument de mesure | Borne d'entrée | Borne de sortie | | | | |
| 1 | (1) | IF AM | • Générateur (465 kHz) | Antenne noyau en ferrite (Remarque 3) | TP.3 | 465 kHz | La plus haute | T202 | (Remarque 1) |
| | (2) | | | | | Répéter étape (1) | | | |
| 2 | (1) | OSC. OC (couverture) | • Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope | TP.1 (par le biais d'une antenna OC fictive) (Remarque 2) | TP.3 | 5,8 MHz | La plus basse | L156 | Max. |
| | (2) | | | | | 18,5 MHz | La plus haute | CT156 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 3 | (1) | ANT. OC (poursuite) | | | | 6,5 MHz | 6,5 MHz | L151 | Max. |
| | (2) | | | | | 16 MHz | 16 MHz | CV101-7 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 4 | (1) | OSC. PO (couverture) | • Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope | Antenne noyau en ferrite (Remarque 3) | TP.3 | 515 MHz | La plus basse | L155 | Max. |
| | (2) | | | | | 1650 MHz | La plus haute | CV101-8 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 5 | (1) | ANT. PO (poursuite) | | | | 600 MHz | 600 MHz | L152-1 | Max. |
| | (2) | | | | | 1400 MHz | 1400 MHz | CT152 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 6 | (1) | OSC. GO (couverture) | • Générateur de signal AM (400 Hz, mod. 30%) • VTVM • Oscilloscope (Commutateur de RIF: B) | Antenne noyau en ferrite (Remarque 3) | TP.3 | 145 kHz | La plus basse | L154 | Max. |
| | (2) | | | | | 290 kHz | La plus haute | CT154 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 7 | (1) | ANT. GO (poursuite) | | | | 160 kHz | 160 kHz | L152-2 | Max. |
| | (2) | | | | | 270 kHz | 270 kHz | CT153 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |

## (2)-1 Section FM

| Etape | | Objet du réglage | Instrument de mesure et branchement | | | Génèscope ou fréquence du générateur de signal | Position de l'aiguille du cadran | Réglage | Lecture |
|---|---|---|---|---|---|---|---|---|---|
| | | | Instrument de mesure | Borne d'entrée | Borne de sortie | | | | |
| 1 | (1) | IF FM | Tourner T201 à fond dans le sens des aiguilles d'une montre | | | 10,7 MHz | La plus haute | T201 | (Remarque 4) |
| | (2) | Coubre-S | • Génèscope (10,7 MHz) | TP.2 | TP.3 | | | T203 | (Remarque 5) |
| 2 | (1) | OSC. FM (couverture) | • Générateur de signal FM (400 Hz, dév. 30%) • Oscilloscope • VTVM | TP.1 (par le biais d'une antenna FM fictive) (Remarque 6) | TP.3 | 87.3 MHz | La plus basse | L102 | Max. |
| | (2) | | | | | 109 MHz | La plus haute | CV101-6 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 3 | (1) | ANT. FM (poursuite) | | | | 90 MHz | 90 MHz | L101 | Max. |
| | (2) | | | | | 106 MHz | 106 MHz | CV101-5 | |
| | (3) | | | | | Répéter les étapes (1) et (2) | | | |
| 4 | (1) | MPX FM (Multiplex) | • Féquencemétre | Brancher un condensateur électrolytique de 10µF/25V entre la broche n°18 du IC201 et la masse (GND). | Broche n°11 du IC201 | — | — | RT201 | 76 kHz ±50Hz (Remarque 5) |

Remarque:

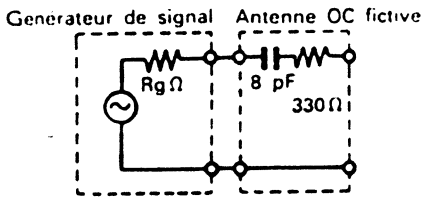
1. Appliquer un signal faible du génèscope. Régler T202 afin d'obtenir un gain maximum et la forme d'onde de la Fig. 9.




Régler la sortie du génèscope de façon à ce qu'il y ait un peu de bruit au niveau du front d'onde.

**Fig. 9**

2. Antenne OC fictive




Rg : impédance de sortie du generateur de signal

**Fig. 10**

3. Relier le générateur de signal AM à l'antenne-cadre. La rapprocher de l'antenne noyau en ferrite.

4. Appliquer un signal faible du génèscope sur TP.2. Régler T201 afin d'obtenir un gain maximum et la forme d'onde de la Fig. 11. Si le centre de la forme d'onde ne peut pas être aligné sur le marqueur, régler la balance droite/gauche.

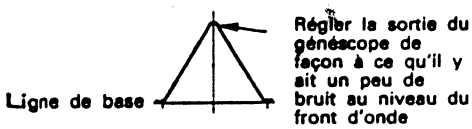



**Fig. 11**

5. Utiliser le noyau de T203 pour former la coubre-S indiquée sur la Fig. 12. Régler la symétrie de A et B au niveau du point C pour la linéarité.

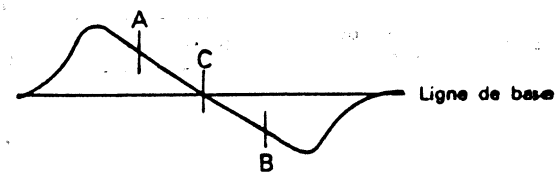
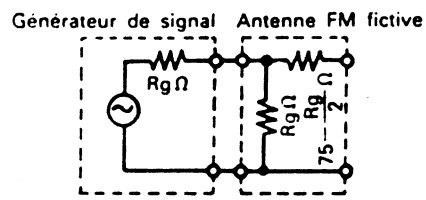



**Fig. 12**

6. Antenne FM fictive




Rg : impédance de sortie du générateur de signal

**Fig. 13**

7. Relier le fréquencemètre sur la broche n°11 du IC201 et brancher une résistance de 220 kΩ en parallèle avec le fréquencemètre.

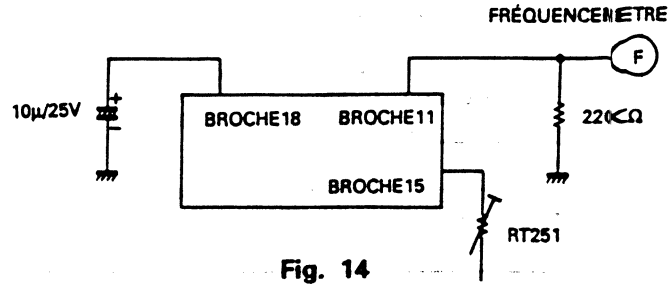



**Fig. 14**

## 2. SECTION LECTEUR-ENREGISTREUR DE CASSETTE

Effectuer les réglages suivants dans l'ordre indiqué après avoir nettoyé la tête, le galet-presseur et le cabestan avec un coton-tige imbibé d'alcool. (Remarque 1)

| Etape | Objet de réglage | Instrument de mesure et branchements | | | Band de vérification | Mode | Réglage | Lecture |
|---|---|---|---|---|---|---|---|---|
| | | Instrument de mesure | Borne d'entrée | Borne de sortie | | | | |
| 1 | Vitesse de défilement | • Fréquence-mètre | — | Borne de hautparleur (charge de 4Ω) | Bande de réglage de vitesse de défilement (3 kHz) | Reproduction | RT501 | 3kHz ± 20Hz (Remarque 2) |
| 2 | Azimuth de tête | • VTVM | — | Borne de hautparleur (charge de 4Ω) | Bande de réglage d'azimuth de tête (10 kHz) | Reproduction | Vis de réglage d'azimuth | Sortie max. (Remarque 3) |

Remarque:

1. Régler dans une plage de 30 sec. après une mise sous tension de 20 minutes au moins.
2. Vérifier la Platine 1 à la fois dans les directions FORWARD (avant) et REVERSE (arrière). Si la lecture est en dehors de la plage des valeurs de réglage, faire le réglage de facon à ce que la lecture soit entre 2975 et 3030 Hz dans les directions FORWARD (avant) et REVERSE (arrière).
3. Si les valeurs maximales des deux canaux diffèrent, régler sur la valeur maximale du canal de gauche (L). Dans ce cas, la différence entre les valeurs maximales des deux canaux doit être comprise dans une plage de 3 dB.

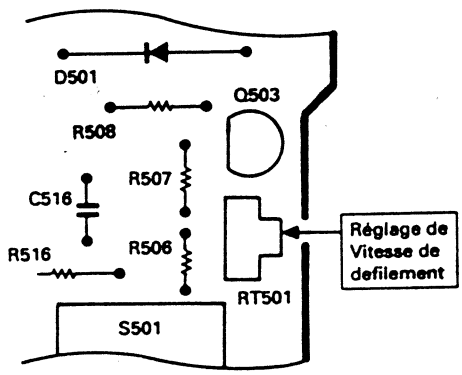



Fig. 15

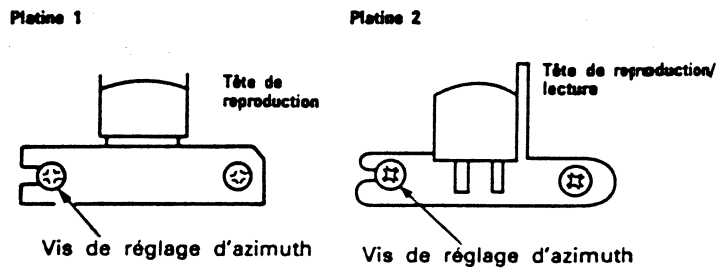



Fig. 16

## *INSPECTION DU MECANISME*

| Point | Poste de vérification | | Valeur de référence | Remarques |
|---|---|---|---|---|
| 1 | Pression du galet-presseur | | 300–500 g | Remarque |
| 2 | Couple d'enroulage | | 30–60 g·m | |
| 3 | Couple d'avancé rapide/rembobinage rapide | | 50 g·cm or more | |
| 4 | Effort à l'utilisation du détecteur pour arrêt automatique | | 40–75 g | |
| 5 | Couple de freinage | | 15 g·cm or more | Mesuré en mode d'arrêt |
| 6 | Couple de tention de recul | Enroulage | 1–6 g·cm | |
| | | Alimentation | 1–4 g·cm | |
| 7 | Intervalle de poussé du volant | | 0,05–0.5 mm | |
| 8 | Button operation force | Touche de reproduction | 1,8 kg ou moins | |
| | | Touche d'avancée rapide | 1,0 kg ou moins | |
| | | Touche de rembobinage | 1,4 kg ou moins | |
| | | Touche d'éjection | 1,0 kg ou moins | |
| | | Touche d'enregistrement | 2,3 kg ou moins | |
| | | Touche de pause | 1,0 kg ou moins | |

**Remarque:**
Placez cet appareil en mode de reproduction, appuyez sur le galet-presseur dans le sens de la flèche à l'aide d'un calibre de tension type éventail, et mesurez la pression lorsque le galet-presseur est libéré du cabestan.

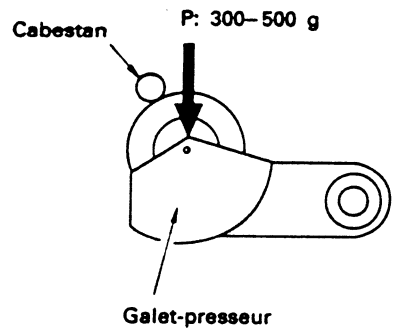



**Fig. 17**

## LUBRICATION

Apply one or two drops of pan motor oil or sonic slider oil to rotating parts. Coat sliding parts with Molycoat (EL-10M).
Lubricate once a year or every 1,000 hours of operation.
Do not let oil contact belts or idlers.

| | | |
|---|---|---|
| Rotating parts | Metal to metal | Pan motor oil (10W-40) |
| | Plastics to metal | Sonic slider oil (#1600) |
| Sliding parts | (Note)<br>Plastics to plastics<br>Plastics to metal | Molycoat (EL-10M) |
| Spring vibration prevention | | Flyol (GB-TS-1) |

NOTE:
When front frame and slide knob are replaced, coat both contacting parts lightly with white grease.

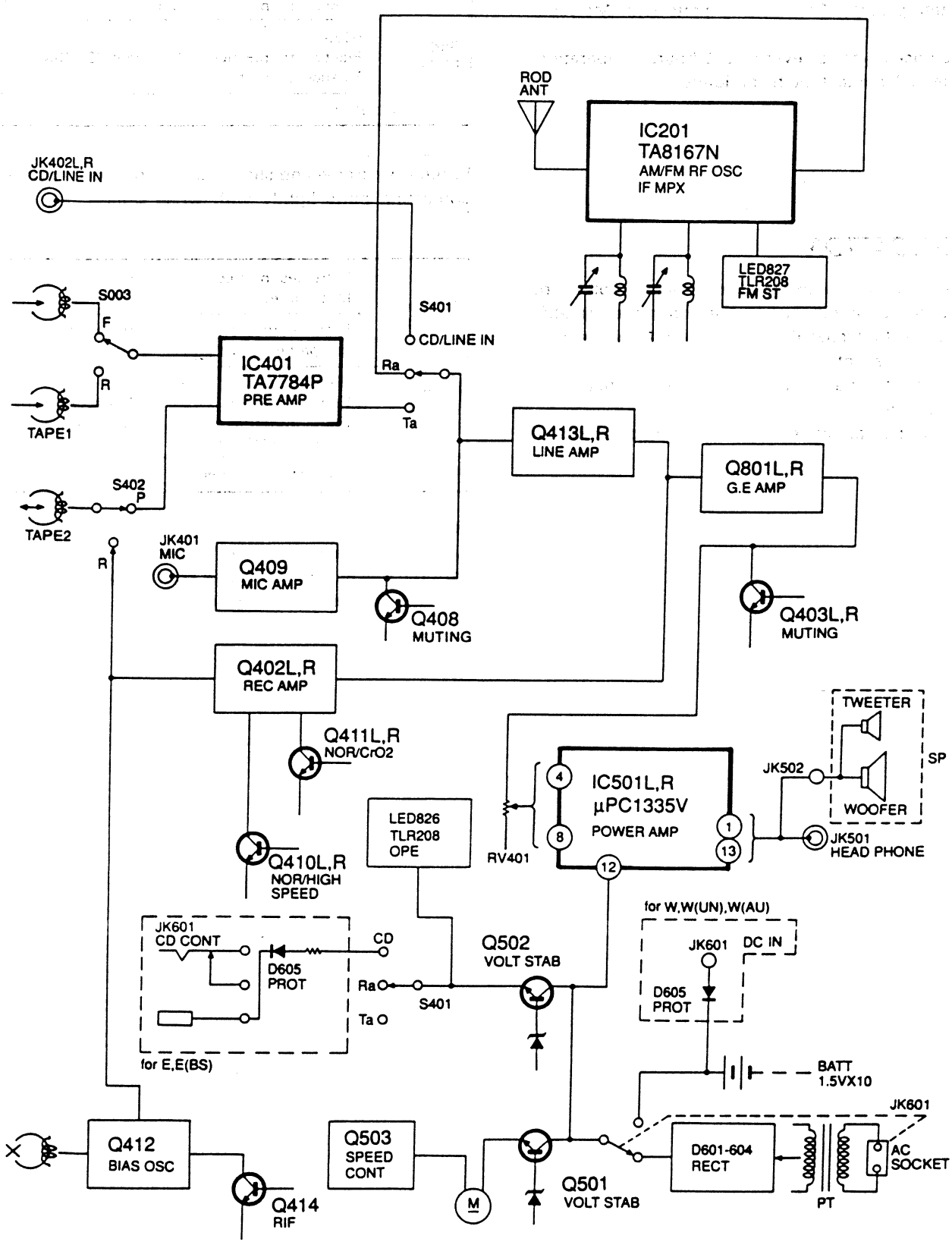
## LUBRIFICATION

Appliquer une ou deux gouttes d'huile moteur ou d'huile Sonic pour curseur, sur les membres rotatifs. De la graisse Molycoat (EL-10M) est appliquée sur les membres coulissants.
Lubrifier une fois par an ou toutes les 1,000 heures de fonctionnement.
Veiller à ne pas appliquer d'huile sur les courroies ou les galets.

| | | |
|---|---|---|
| Membres rotatifs | Entre les parties Métalliques | Huile moteur (10W-40) |
| | Entre le moulage et les parties métalliques | Huile Sonic pour curseur (#1600) |
| Membres Coulis-sans | (Remarque)<br>Entre moulures<br>Entre moulures et pièces métalliques | Molycoat (EL-10M) |
| Prévention de vibration de ressort | | Floyl (GB-TS-1) |

Remarque:
Lorsque le châssis avant et le boulon curseur doivent être remplacés, appliquer une couche légère de graisse blanche sur les parties de contact.

## ıIAGRAM • DIAGRAMME SYNOPTIQUE



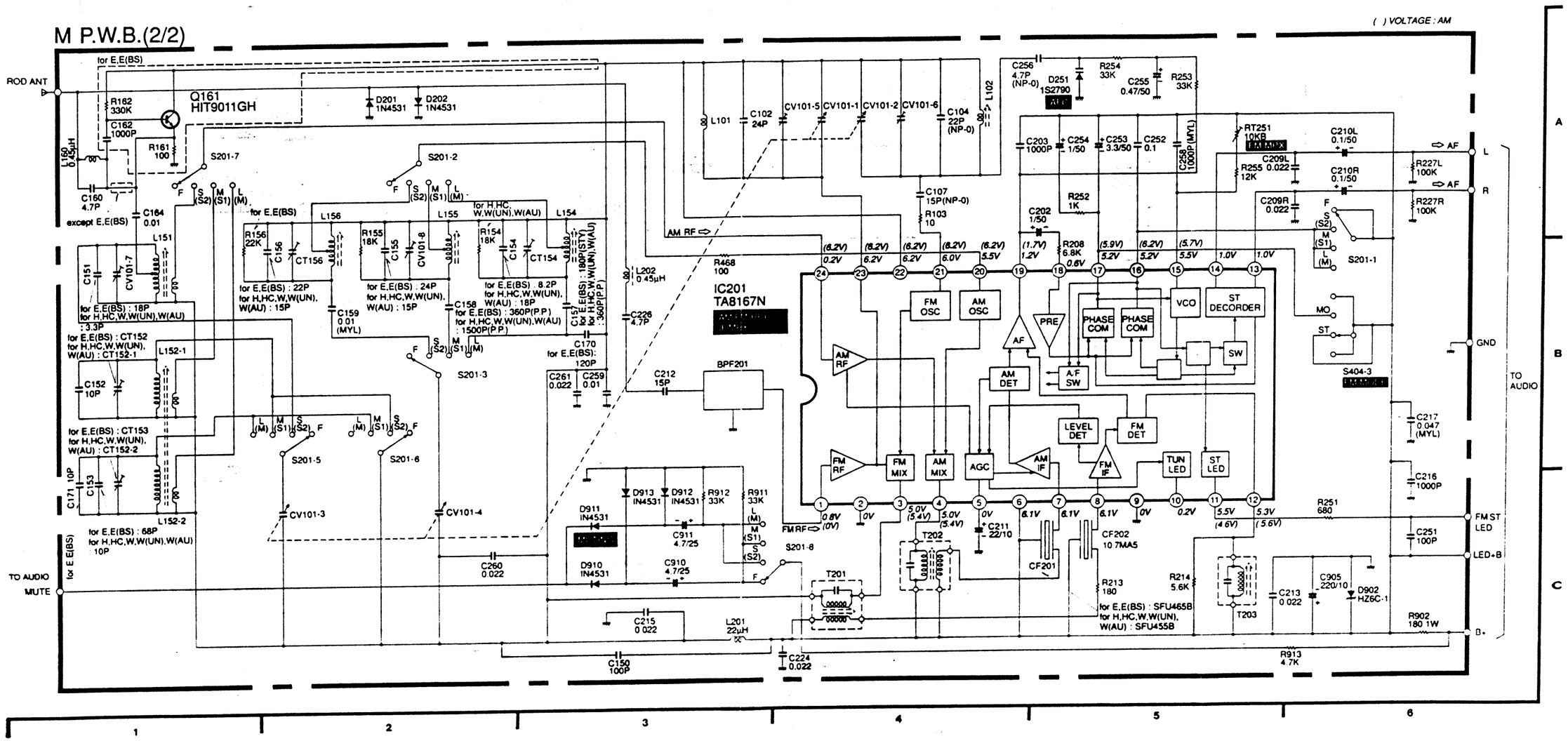
## *CIRCUIT DIAGRAM • DIAGRAMME DES CIRCUITS*

TUNER SECTION

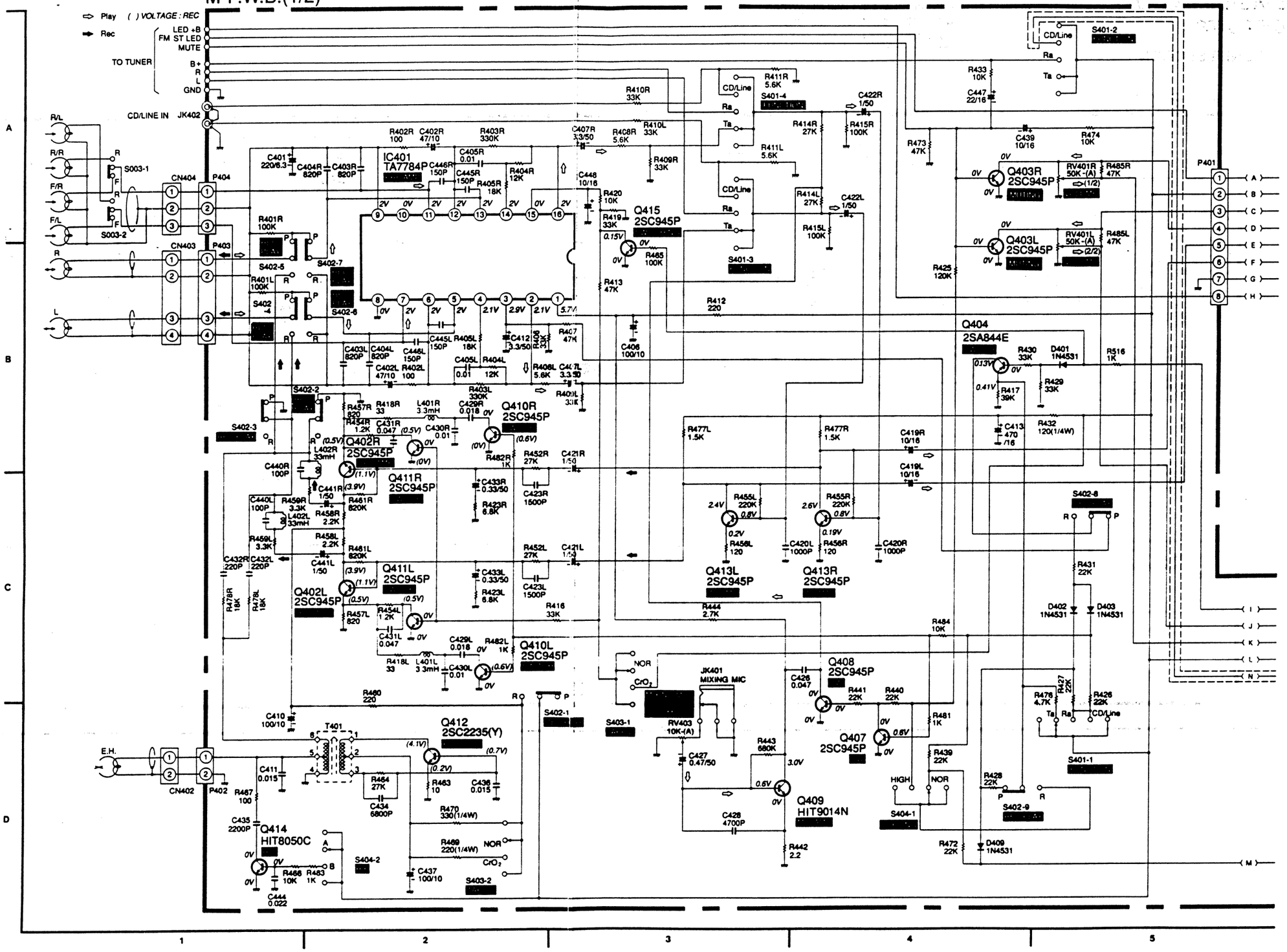
CAUTION
Use the electrolytic capacitors with explosion-proof valve when the diameter of them is more than 10mmø.

M P.W.B.(2/2)

( ) VOLTAGE : AM



# M P.W.B.(1/2)


Play ( ) VOLTAGE : REC
Rec
LED +B
FM ST LED
MUTE
TO TUNER
B+
R
L
GND
CD/LINE IN JK402
R/L
R/R
F/R
F/L
R
L
S003-1
S003-2
CN404
P404
CN403
P403
IC401 TA7784P
Q415 2SC945P
Q410R 2SC945P
Q402R 2SC945P
Q411R 2SC945P
Q411L 2SC945P
Q402L 2SC945P
Q410L 2SC945P
Q412 2SC2235(Y)
Q414 HIT8050C
Q413L 2SC945P
Q413R 2SC945P
Q408 2SC945P
Q407 2SC945P
Q409 HIT9014N
Q404 2SA844E
Q403R 2SC945P
Q403L 2SC945P
JK401 MIXING MIC
T401
D401 1N4531
D402 1N4531
D403 1N4531
D409 1N4531
S401-2
S401-4
S401-3
S402-2
S402-3
S402-5
S402-7
S402-6
S402-8
S402-9
S403-1
S403-2
S404-1
S404-2
S401-1
P401
CN402
P402
E.H.
CD/Line
NOR
HIGH
CrO2
A
B
R401R 100K
R401L 100K
R410R 33K
R410L 33K
R411R 5.6K
R411L 5.6K
R414R 27K
R414L 27K
R415R 100K
R415L 100K
R422R 1/50
R422L 1/50
R433 10K
R473 47K
R474 10K
R485R 47K
R485L 47K
R425 120K
R516 1K
R430 33K
R429 33K
R417 39K
R432 120(1/4W)
R431 22K
R484 10K
R481 1K
R476 4.7K
R427 22K
R426 22K
R428 22K
R439 22K
R440 22K
R441 22K
R443 680K
R442 2.2
R472 22K
R477L 1.5K
R477R 1.5K
R455L 220K
R455R 220K
R456L 120
R456R 120
C420L 1000P
C420R 1000P
C419R 10/16
C419L 10/16
C439 10/16
C447 22/16
C448 10/16
C422R 1/50
C422L 1/50
C413 470/16
C426 0.047
C427 0.47/50
C428 4700P
R444 2.7K
R416 33K
R460 220
R412 220
R470 330(1/4W)
R469 220(1/4W)
R463 10
R464 27K
R466 10K
R483 1K
R487 100
R457R 820
R457L 820
R454R 1.2K
R454L 1.2K
R458R 2.2K
R458L 2.2K
R459R 3.3K
R459L 3.3K
R461R 820K
R461L 820K
R452R 27K
R452L 27K
R482R 1K
R482L 1K
R423R 6.8K
R423L 6.8K
R418R 33
R418L 33
R419 33K
R420 10K
R465 100K
R413 47K
R408R 5.6K
R408L 5.6K
R409R 33K
R409L 33K
R407 47K
R405R 18K
R405L 18K
R404R 12K
R404L 12K
R403R 330K
R403L 330K
R402R 100
R402L 100
C401 220/6.3
C404R 820P
C403R 820P
C405R 0.01
C446R 150P
C445R 150P
C403L 820P
C404L 820P
C446L 150P
C445L 150P
C405L 0.01
C402L 47/10
C402R 47/10
C407R 3.3/50
C412 3.3/50
C406 100/10
C429R 0.018
C429L 0.018
C430R 0.01
C430L 0.01
C431R 0.047
C431L 0.047
C421R 1/50
C421L 1/50
C423R 1500P
C423L 1500P
C433R 0.33/50
C433L 0.33/50
C441R 1/50
C441L 1/50
C440R 100P
C440L 100P
C432R 220P
C432L 220P
C478R 18K
C478L 18K
L401R 3.3mH
L401L 3.3mH
L402R 33mH
L402L 33mH
C410 100/10
C411 0.015
C436 0.015
C434 6800P
C435 2200P
C437 100/10
C444 0.022
RV401R 50K-(A) (1/2)
RV401L 50K-(A) (2/2)
RV403 10K-(A)
0V
2V
2.1V
2.9V
5.7V
0.15V
0.41V
0.13V
3.0V
0.6V
0.8V
2.4V
2.6V
0.2V
0.19V
(0.5V)
(1.1V)
(3.9V)
(0V)
(0.6V)
(4.1V)
(0.7V)
(0.2V)

GE P.W.B.

M P.W.B.(1/2)

IC501
µPC1335V

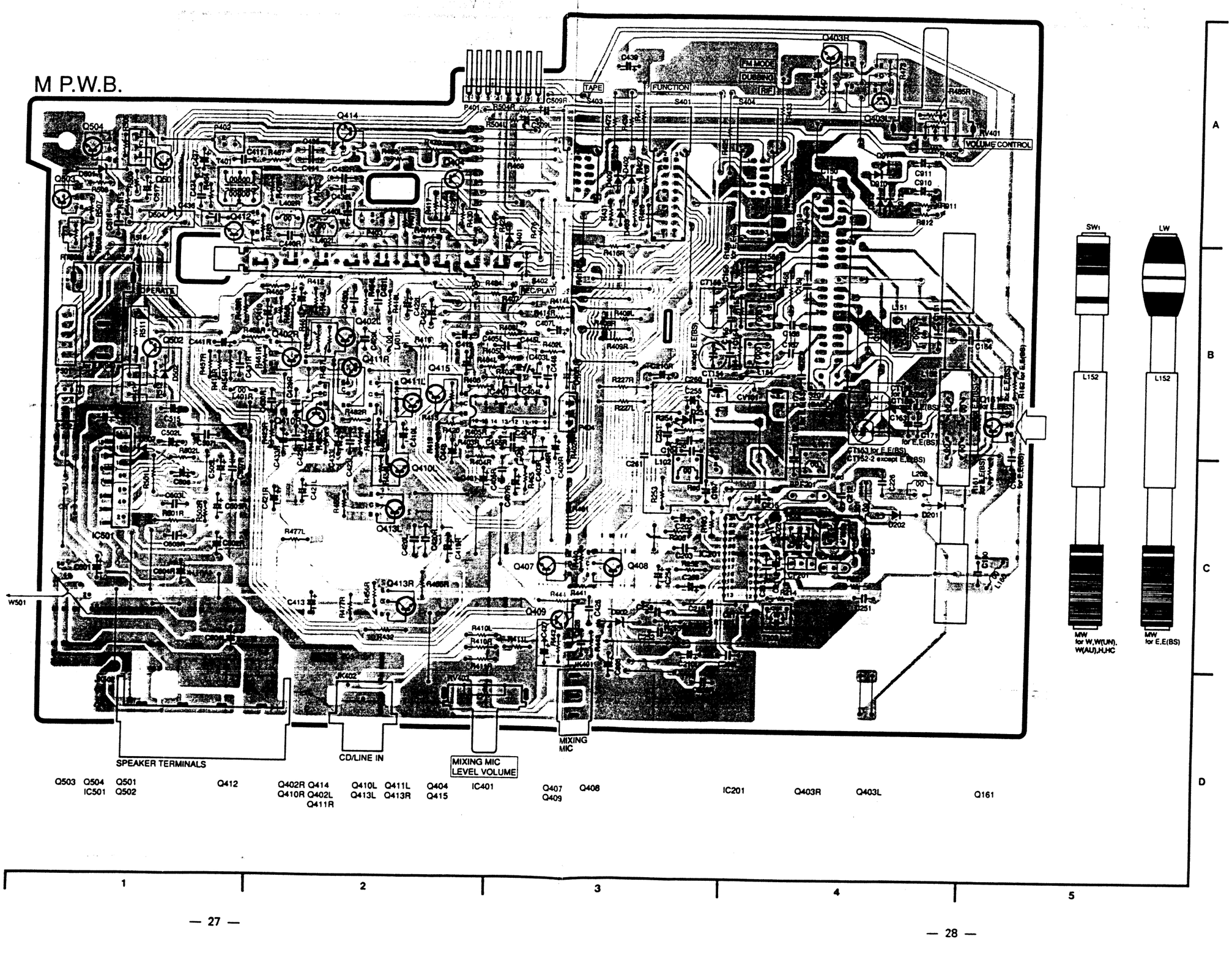
HP P.W.B.

for E,E(BS),H,HC P P.W.B.

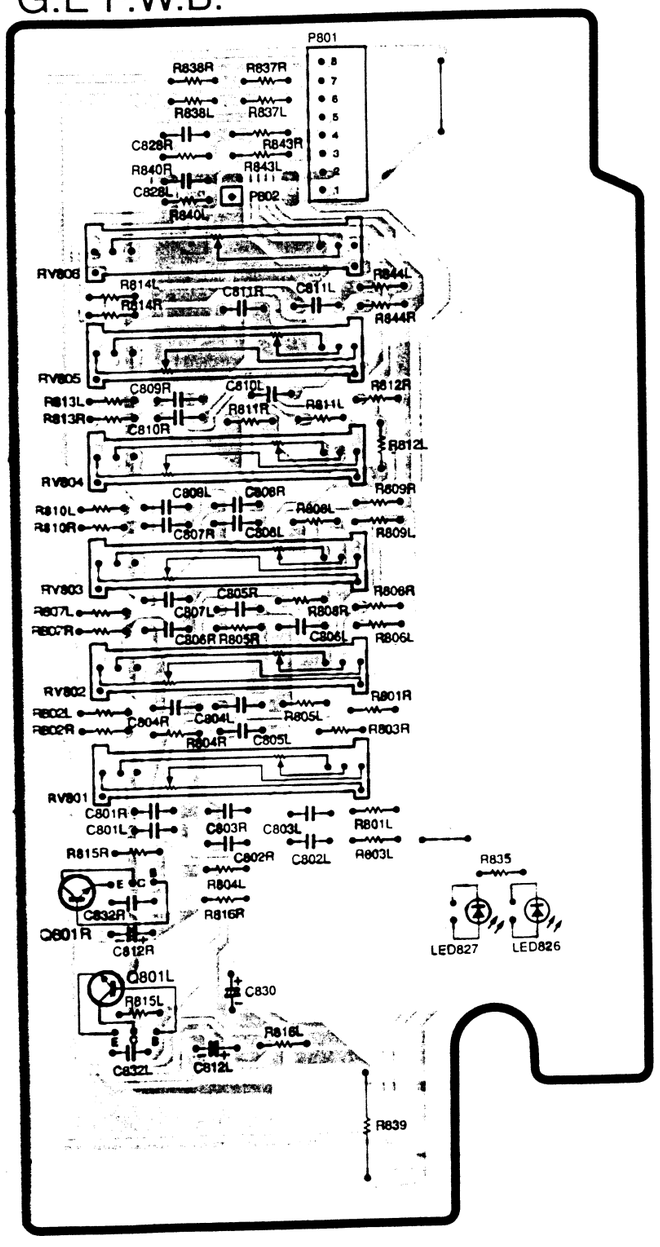
for W,W(UN),W(AU) P P.W.B.

## *PRINTED WIRING BOARD • PLAN DE BASE*

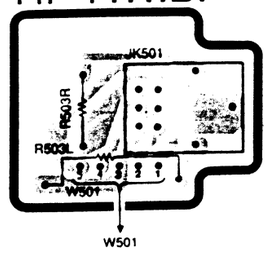
M P.W.B.



## G.E P.W.B.

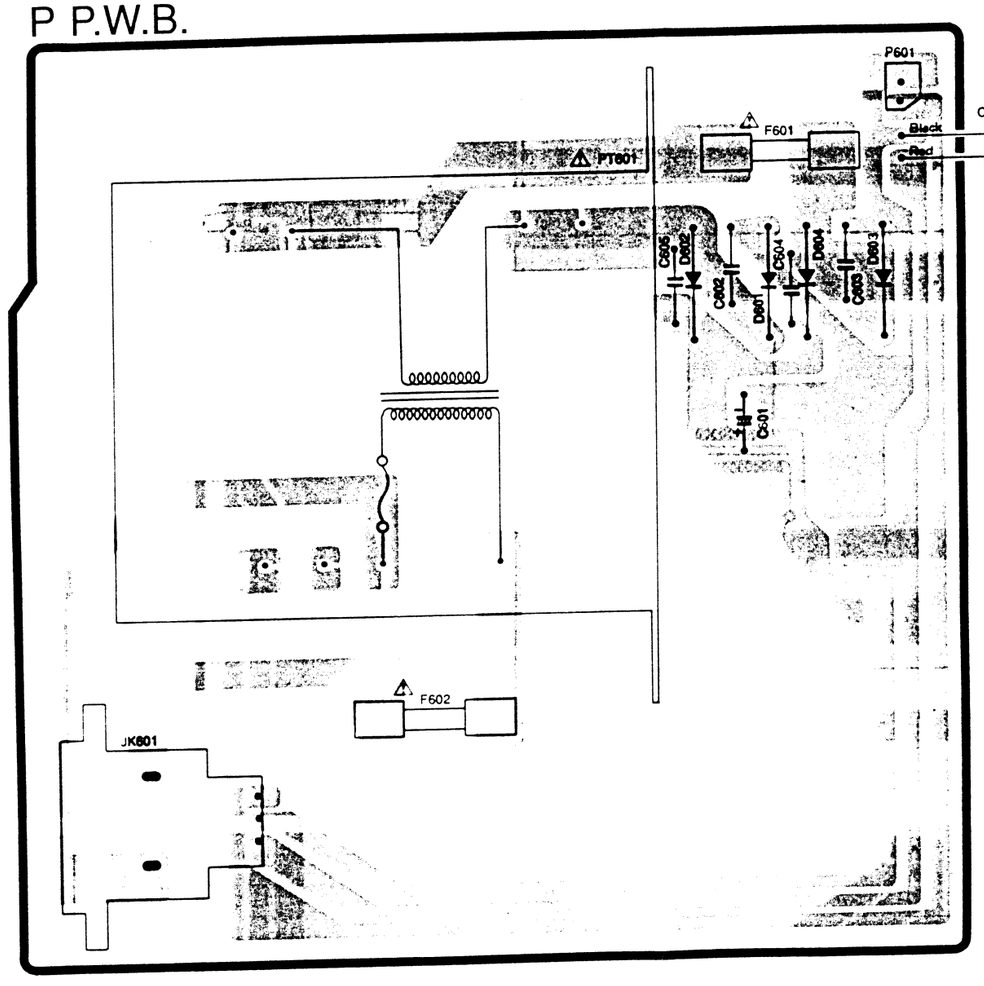



## HP P.W.B.




for H,HC

## P P.W.B.



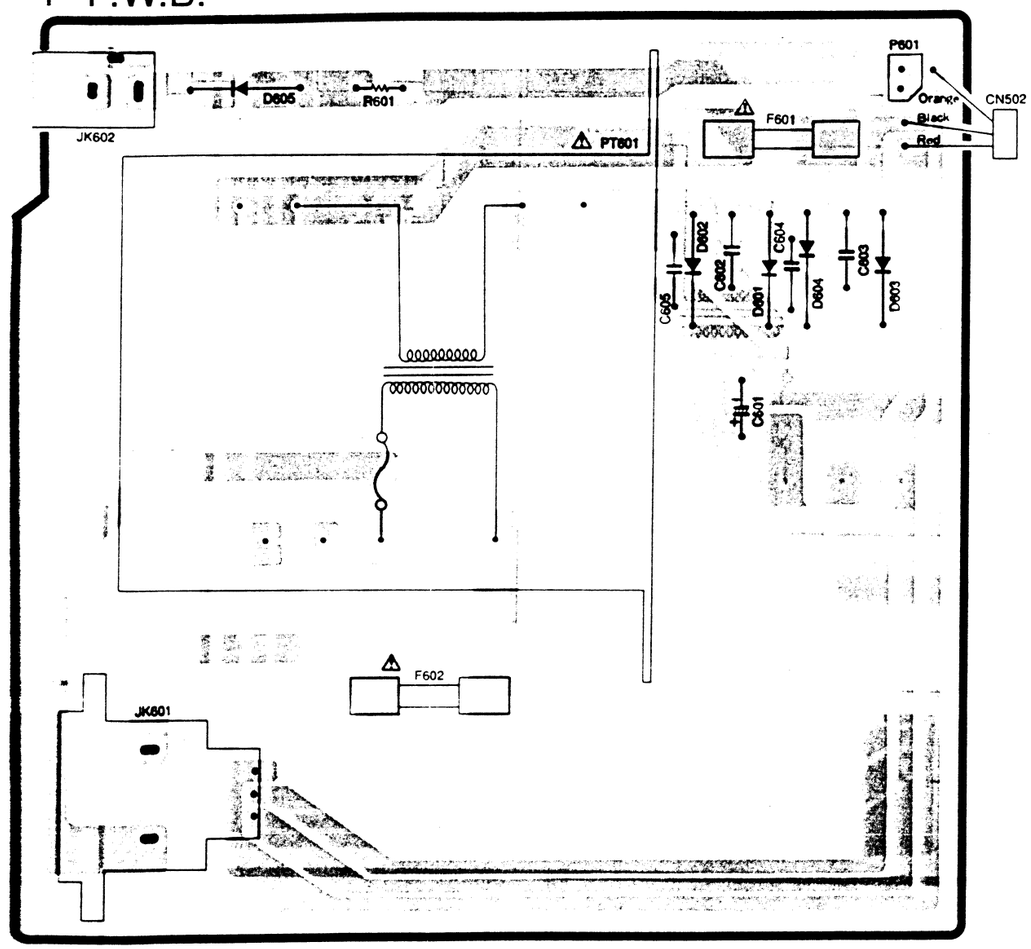

Q801R Q801L

1 2 3 4 5

A B C

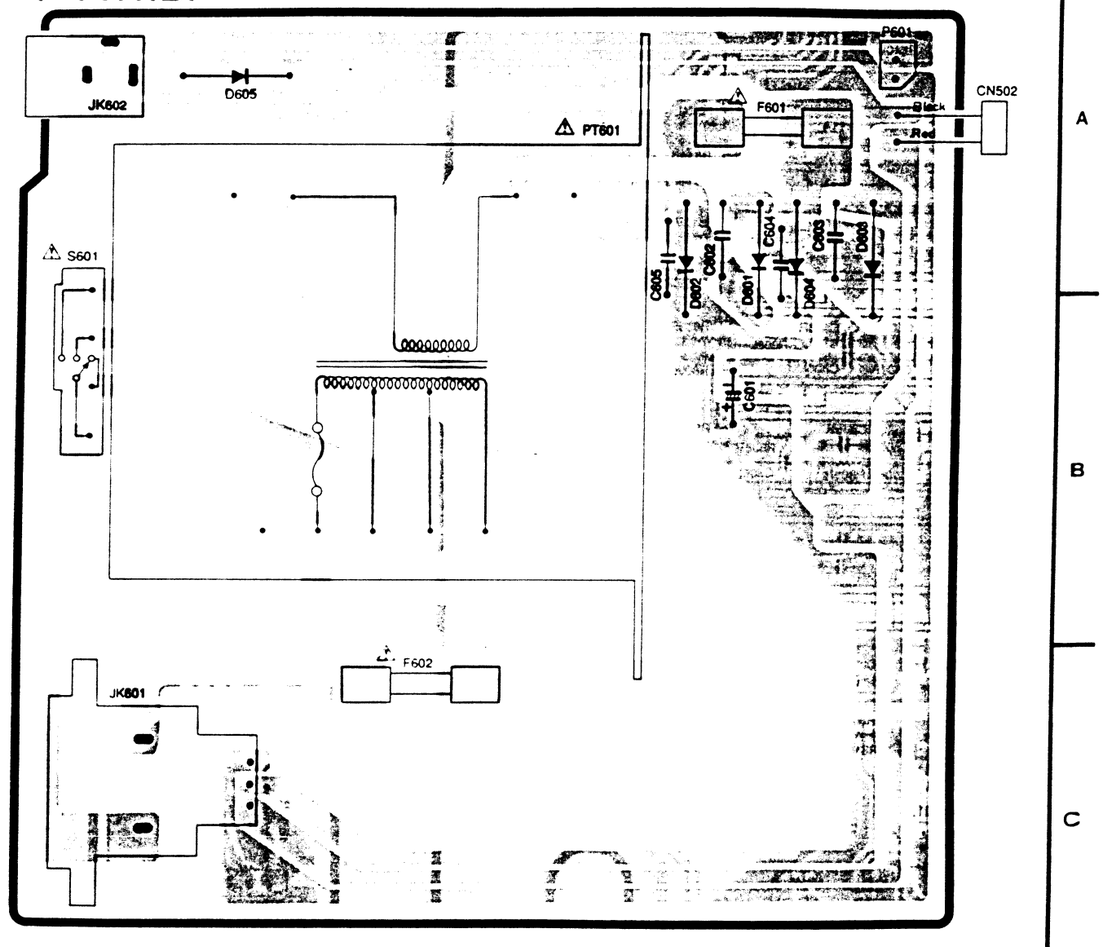
for E.E(BS)

## P P.W.B.

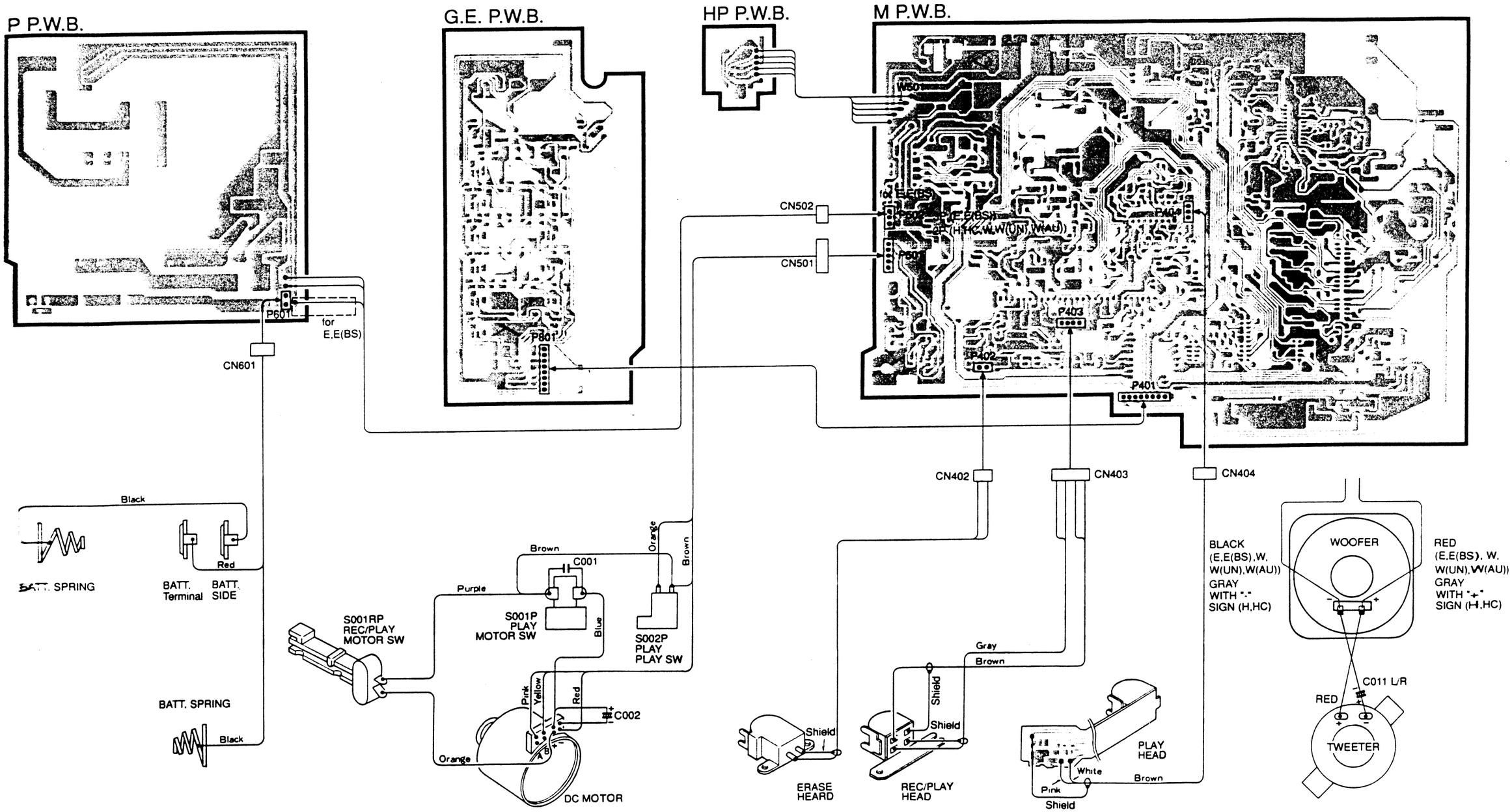



for W,W(UN),W(AU)

## P P.W.B.



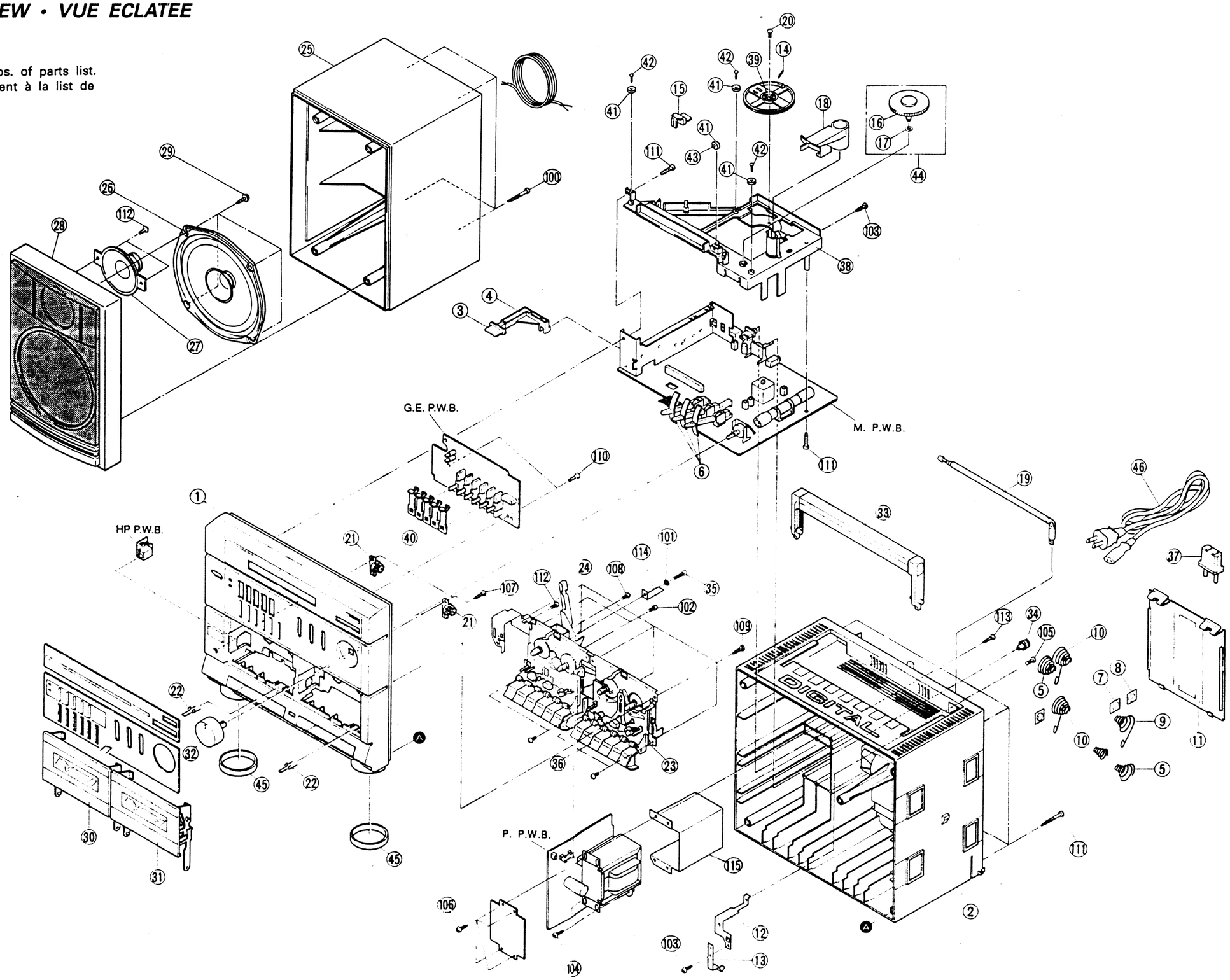
## *WIRING DIAGRAM • SCHEMA DE CABLAGE*



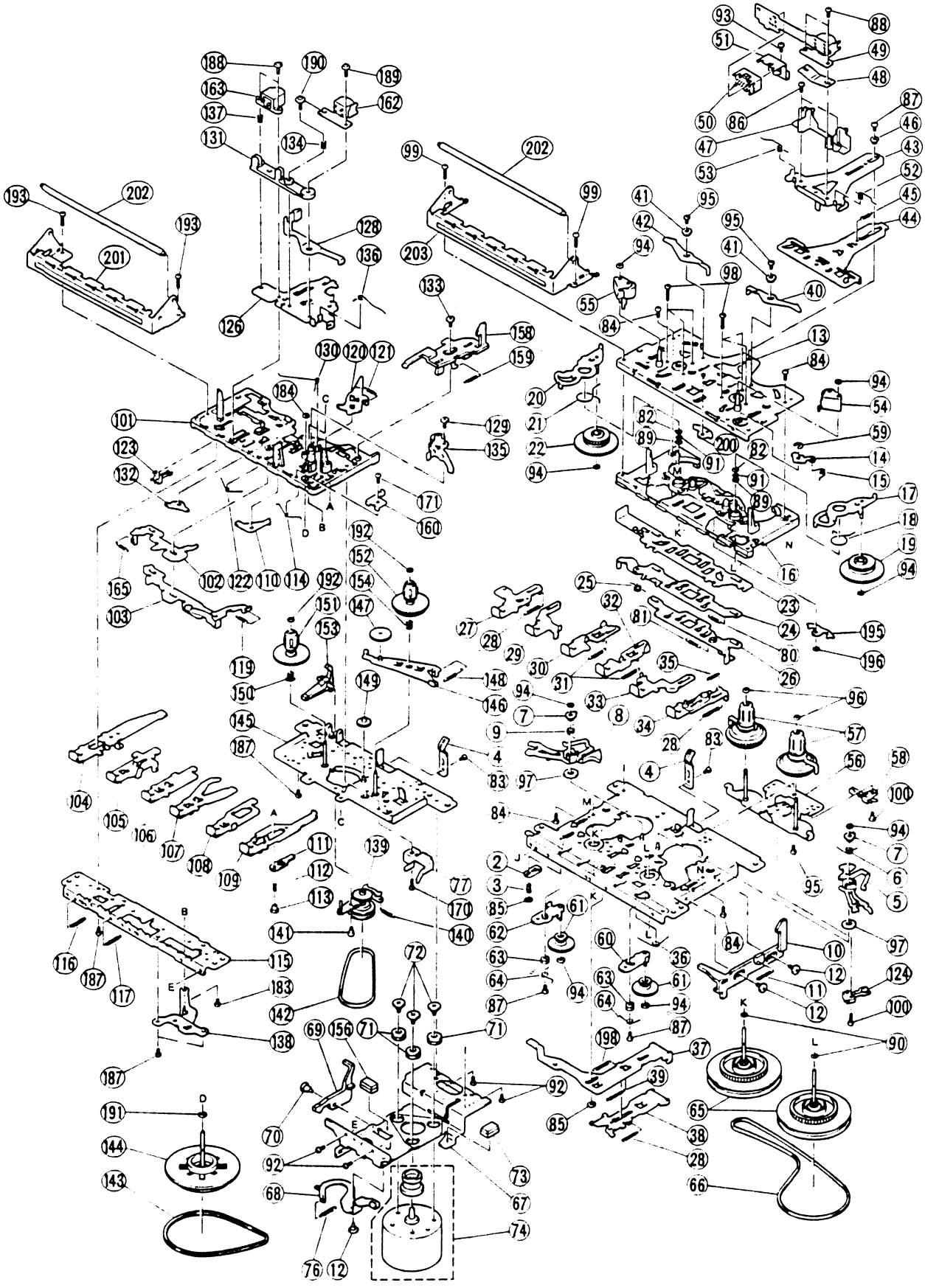
## *EXPLODED VIEW • VUE ECLATEE*

- **Cabinet**
- **Cabine**

Nos. are reference Nos. of parts list.
Les numéros se référent à la list de pièces



- **Cassette Chassis** Nos. are reference Nos. of parts list.
- **Châssis de Cassette** Les numéros se réfèrent à la list de pièces



# *REPLACEMENT PARTS LIST*

**PRODUCT SAFETY NOTE:** Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

ABBREVIATIONS:
Capacitors ..... CC: Cylindrical ceramic, CD: Ceramic discal, PF: Polyester film, EL: Electrolytic, PP: Polypropylene, ST: Styrol,
Resistors ..... CF: Carbon film, CC: Carbon composition, MF: Metal oxide film, VR: Variable resistor
Semiconductor ..... TR: Transistor, DI: Diode, ZD: Zener diode VA: Varistor, TH: Thermistor, IC: IC

| SYMBOL NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | | CAPACITORS; |
| C001 | 0244171 | CD 0.01µF +80 −20 % 50V |
| C002 | 0800009 | EL 4.7µF 25V |
| C011L, R | 0800015 | EL 10µF 16V |
| C102 | 0230621 | CD 24PF ±5% 50V |
| C104 | 0246448 | CD 22PF ±5% 50V |
| C107 | 0246444 | CD 15PF ±5% 50V |
| C150 | 0208684 | CD 100PF ±5% 50V |
| C151 | 0890012 | CD 18PF ±20% 50V [for E, E(BS)] |
| C151 | 0890004 | CD 3.3PF ±10% 50V [except E, E(BS)] |
| C152 | 0890009 | CD 12PF ±5% 50V [for E, E(BS)] |
| C152 | 0890008 | CD 10PF ±5% 50V [except E, E(BS)] |
| C153 | 0890021 | CD 82PF ±10% 50V [for E, E(BS)] |
| C153 | 0890008 | CD 10PF ±5% 50V [except E, E(BS)] |
| C154 | 0890007 | CD 8.2PF ±10% 50V [for E, E(BS)] |
| C154 | 0890012 | CD 18PF ±20% 50V [except E, E(BS)] |
| C155 | 0890012 | CD 18PF ±20% 50V [for E, E(BS)] |
| C155 | 0890011 | CD 15PF ±5% 50V [except E, E(BS)] |
| C156 | 0890013 | CD 22PF ±20% 50V [for E, E(BS)] |
| C156 | 0890011 | CD 15PF ±5% 50V [except E, E(BS)] |
| C157 | 1221391 | ST 180PF ±5% 50V [for E, E(BS)] |
| C157 | 0268321 | PP 360PF ±5% 100V [except E, E(BS)] |
| C158 | 0268321 | PP 360PF ±5% 100V [for E, E(BS)] |
| C158 | 0268442 | PP 1500PF ±5% 100V [except E, E(BS)] |
| C159 | 0880009 | PF 0.01µF ±10% 50V |
| C160 | 0890005 | CD 4.7PF ±10% 50V |
| C162 | 0209731 | CD 1000PF ±10% 50V [for E, E(BS)] |
| C164 | 0890043 | CD 0.01µF ±20% 16V |
| C170 | 0208686 | CD 120PF ±5% 50V [for E, E(BS)] |
| C202 | 0800003 | EL 1µF 50V |

| SYMBOL NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| C203 | 0209731 | CD 1000PF ±10% 50V |
| C209L, R | 0209762 | CD 0.15µF ±20% 25V |
| C210L, R | 0800003 | EL 1µF 50V |
| C211 | 0800022 | EL 22µF 10V |
| C212 | 0890011 | CD 15PF ±5% 50V |
| C213 | 0890044 | CD 0.022µF +80 −20 % 25V |
| C215 | 0890044 | CD 0.022µF +80 −20 % 25V |
| C216 | 0890022 | CD 100PF ±10% 50V |
| C217 | 0880014 | PF 0.047µF ±10% 50V |
| C224 | 0240216 | CD 0.022µF ±10% 25V |
| C226 | 0890005 | CD 4.7PF ±10% 50V |
| C251 | 0890022 | CD 100PF ±10% 50V |
| C252 | 0240224 | CD 0.1µF ±10% 25V |
| C253 | 0800007 | EL 3.3µF 50V |
| C254 | 0800003 | EL 1µF 50V |
| C255 | 0800001 | EL 0.47µF 50V |
| C256 | 0230648 | CD 4.7PF ±10% 50V |
| C257 | 0248684 | CD 100PF ±5% 50V |
| C258 | 0880003 | PF 1000PF ±10% 50V |
| C401 | 0800056 | EL 220µF 6.3V |
| C402L, R | 0800039 | EL 47µF 10V |
| C403L, R | 0890034 | CD 820PF ±10% 50V |
| C404L, R | 0890034 | CD 820PF ±10% 50V |
| C405L, R | 0890043 | CD 0.01µF ±20% 16V |
| C406 | 0800048 | EL 100µF 10V |
| C407L, R | 0800007 | EL 3.3µF 50V |
| C410 | 0800049 | EL 100µF 16V |
| C411 | 0268435 | PF 0.015µF ±5% 100V |
| C412 | 0800007 | EL 3.3µF 50V |
| C413 | 0800074 | EL 470µF 16V |
| C419L, R | 0800015 | EL 10µF 16V |
| C420L, R | 0890035 | CD 1000PF ±10% 50V |
| C421L, R | 0800003 | EL 1µF 50V |
| C422L, R | 0800003 | EL 1µF 50V |
| C426 | 0209175 | CD 0.047µF +80 −20 % 50V |
| C427 | 0800001 | EL 0.47µF 50V |
| C428 | 0890039 | CD 4700PF ±30% 16V |
| C429L, R | 0240215 | CD 0.018µF ±10% 25V |
| C430L, R | 0209737 | CD 0.01µF ±10% 50V |
| C432L, R | 0890026 | CD 220PF ±10% 50V |
| C433L, R | 02528032 | EL 0.33µF 50V |
| C434 | 0890041 | CD 6800PF ±30% 16V |
| C435 | 0890036 | CD 1500PF ±20% 50V |
| C436 | 0209762 | CD 0.15µF ±20% 25V |
| C437 | 0800048 | EL 100µF 10V |
| C439 | 0800015 | EL 10µF 16V |
| C440L, R | 0208684 | CD 100PF ±5% 50V |
| C441L, R | 0800003 | EL 1µF 50V |
| C444 | 0890044 | CD 0.022µF +80 −20 % 25V |

| SYMBOL NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| C445L, R | 0248688 | CD 150PF ±5% 50V |
| C446L, R | 0248688 | CD 150PF ±5% 50V |
| C448 | 0800015 | EL 10μF 16V |
| C501 | 0800083 | EL 1000μF 25V |
| C502L, R | 0800049 | EL 100μF 16V |
| C503L, R | 0800016 | PF 0.1μF ±10% 50V |
| C504L, R | 0800082 | EL 1000μF 16V |
| C505L, R | 0800047 | EL 100μF 6.3V |
| C506 | 0800024 | EL 22μF 25V |
| C507L, R | 0890028 | CD 330PF ±10% 50V |
| C508 | 0800051 | EL 100μF 25V |
| C515 | 0800059 | EL 220μF 25V |
| C516 | 0890044 | CD 0.022μF +80 −20% 25V |
| C517 | 0800051 | EL 100μF 25V |
| C518 | 0800009 | EL 4.7μF 25V |
| C601 | 0252642 | EL 2200μF 25V |
| C602 | 0244173 | CD 0.022μF +80 −20% 50V |
| C603 | 0244173 | CD 0.022μF +80 −20% 50V |
| C604 | 0244173 | CD 0.022μF +80 −20% 50V |
| C605 | 0244173 | CD 0.022μF +80 −20% 50V |
| C801L, R | 0890041 | CD 6800PF ±30% 16V |
| C802L, R | 0209175 | CD 0.047μF +80 −20% 50V |
| C803L, R | 0890041 | CD 6800PF ±30% 16V |
| C804L, R | 0890044 | CD 0.022μF +80 −20% 25V |
| C805L, R | 0890039 | CD 4700PF ±30% 16V |
| C806L, R | 0890044 | CD 0.022μF +80 −20% 25V |
| C807L, R | 0890038 | CD 3300PF ±20% 16V |
| C808L, R | 0890043 | CD 0.01μF ±20% 16V |
| C809L, R | 0890036 | CD 1500PF ±20% 16V |
| C810L, R | 0890041 | CD 6800PF ±30% 16V |
| C811L, R | 0890026 | CD 220PF ±10% 50V |
| C812L, R | 0800015 | EL 10μF 16V |
| C828L, R | 0890039 | CD 4700PF ±30% 16V |
| C830 | 0800048 | EL 100μF 10V |
| C832L | 0240067 | CD 0.047μF +80 −20% 50V |
| C905 | 0800057 | EL 220μF 10V |
| C910 | 0800009 | EL 4.7μF 25V |
| C911 | 0800009 | EL 4.7μF 25V |
| | | RESISTORS; |
| R103 | 0700016 | CF 15Ω ±5% 1/16W |
| R154 | 0700053 | CF 8.2KΩ ±5% 1/16W [except E, E(BS)] |
| R155 | 0700056 | CF 15KΩ ±5% 1/16W [for E, E(BS)] |
| R161 | 0700027 | CF 100Ω ±5% 1/16W [for E, E(BS)] |
| R162 | 0700074 | CF 330KΩ ±5% 1/16W [for E, E(BS)] |
| R213 | 0700031 | CF 180Ω ±5% 1/16W |
| R214 | 0700056 | CF 15KΩ ±5% 1/16W |
| R227L, R | 0700067 | CF 100KΩ ±5% 1/16W |
| R251 | 0700045 | CF 2.2KΩ ±5% 1/16W |
| R252 | 0700041 | CF 1KΩ ±5% 1/16W |
| R253 | 0700061 | CF 33KΩ ±5% 1/16W |
| R254 | 0700061 | CF 33KΩ ±5% 1/16W |
| R255 | 0700054 | CF 10KΩ ±5% 1/16W |
| R401L, R | 0700067 | CF 100KΩ ±5% 1/16W |
| R402L, R | 0700027 | CF 100Ω ±5% 1/16W |
| R403L, R | 0700074 | CF 330KΩ ±5% 1/16W |
| R404L, R | 0700055 | CF 12KΩ ±5% 1/16W |
| R405L, R | 0700057 | CF 18KΩ ±5% 1/16W |
| R406 | 0700061 | CF 33KΩ ±5% 1/16W |

| SYMBOL NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| R407 | 0700063 | CF 47KΩ ±5% 1/16W |
| R408L, R | 0700051 | CF 5.6KΩ ±5% 1/16W |
| R409L, R | 0700061 | CF 33KΩ ±5% 1/16W |
| R410L, R | 0700061 | CF 33KΩ ±5% 1/16W |
| R411L, R | 0700051 | CF 5.6KΩ ±5% 1/16W |
| R412 | 0700032 | CF 220Ω ±5% 1/16W |
| R413 | 0700049 | CF 4.7KΩ ±5% 1/16W |
| R414L, R | 0700059 | CF 27KΩ ±5% 1/16W |
| R415L, R | 0700067 | CF 100KΩ ±5% 1/16W |
| R417 | 0700062 | CF 39KΩ ±5% 1/16W |
| R418L, R | 0700021 | CF 33Ω ±5% 1/16W |
| R419 | 0700061 | CF 33KΩ ±5% 1/16W |
| R420 | 0700054 | CF 10KΩ ±5% 1/16W |
| R423L, R | 0700052 | CF 6.8KΩ ±5% 1/16W |
| R425 | 0700068 | CF 120KΩ ±5% 1/16W |
| R426 | 0700058 | CF 22KΩ ±5% 1/16W |
| R427 | 0700058 | CF 22KΩ ±5% 1/16W |
| R428 | 0700058 | CF 22KΩ ±5% 1/16W |
| R429 | 0700061 | CF 33KΩ ±5% 1/16W |
| R430 | 0700061 | CF 33KΩ ±5% 1/16W |
| R431 | 0700058 | CF 22KΩ ±5% 1/16W |
| R432 | 0129563 | CF 120Ω ±5% 1/4W |
| R439 | 0700058 | CF 22KΩ ±5% 1/16W |
| R440 | 0700058 | CF 22KΩ ±5% 1/16W |
| R441 | 0700058 | CF 22KΩ ±5% 1/16W |
| R442 | 0700005 | CF 2.2Ω ±5% 1/16W |
| R443 | 0700078 | CF 680KΩ ±5% 1/16W |
| R444 | 0700046 | CF 2.7KΩ ±5% 1/16W |
| R452L, R | 0700052 | CF 6.8KΩ ±5% 1/16W |
| R455L, R | 0700072 | CF 220KΩ ±5% 1/16W |
| R456L, R | 0700028 | CF 120Ω ±5% 1/16W |
| R457L, R | 0700039 | CF 820Ω ±5% 1/16W |
| R458L, R | 0700045 | CF 2.2KΩ ±5% 1/16W |
| R459L, R | 0700047 | CF 3.3KΩ ±5% 1/16W |
| R460 | 0700032 | CF 220Ω ±5% 1/16W |
| R461L, R | 0700079 | CF 820KΩ ±5% 1/16W |
| R463 | 0700014 | CF 10Ω ±5% 1/16W |
| R464 | 0700059 | CF 27KΩ ±5% 1/16W |
| R465 | 0700067 | CF 100KΩ ±5% 1/16W |
| R466 | 0700054 | CF 10KΩ ±5% 1/16W |
| R467 | 0700027 | CF 100Ω ±5% 1/16W |
| R468 | 0700027 | CF 100Ω ±5% 1/16W |
| R469 | 0129569 | CF 220Ω ±5% 1/4W |
| R470 | 1129573 | CF 330Ω ±5% 1/4W |
| R472 | 0700058 | CF 22KΩ ±5% 1/16W |
| R473 | 0700063 | CF 47KΩ ±5% 1/16W |
| R474 | 0700054 | CF 10KΩ ±5% 1/16W |
| R476 | 0700049 | CF 4.7KΩ ±5% 1/16W |
| R477L, R | 0700043 | CF 1.5KΩ ±5% 1/16W |
| R478L, R | 0700057 | CF 18KΩ ±5% 1/16W |
| R481 | 0700041 | CF 1KΩ ±5% 1/16W |
| R482L, R | 0700041 | CF 1KΩ ±5% 1/16W |
| R483 | 0700041 | CF 1KΩ ±5% 1/16W |
| R484 | 0700054 | CF 10KΩ ±5% 1/16W |
| R485L, R | 0700063 | CF 47KΩ ±5% 1/16W |
| R501L, R | 0700005 | CF 2.2Ω ±5% 1/16W |
| R502L, R | 0700024 | CF 56KΩ ±5% 1/16W |
| R503L, R | 01132902 | CF 180Ω ±5% 1/2W |
| R504L, R | 0700041 | CF 1KΩ ±5% 1/16W |
| R505 | 0700043 | CF 1.5KΩ ±5% 1/16W |
| R506 | 0700049 | CF 4.7KΩ ±5% 1/16W |
| R508 | 0700068 | CF 120KΩ ±5% 1/16W |
| R511 | 0700038 | CF 680Ω ±5% 1/16W |
| R512 | 0700038 | CF 680Ω ±5% 1/16W |

| SYMBOL NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| R515 | 0700041 | CF 1KΩ ±5% 1/16W |
| R516 | 0700041 | CF 1KΩ ±5% 1/16W |
| R801L, R | 0700055 | CF 12KΩ ±5% 1/16W |
| R802L, R | 0700055 | CF 12KΩ ±5% 1/16W |
| R803L, R | 0700075 | CF 390KΩ ±5% 1/16W |
| R804L, R | 0700059 | CF 27KΩ ±5% 1/16W |
| R805L, R | 0700049 | CF 4.7KΩ ±5% 1/16W |
| R806L, R | 0700054 | CF 10KΩ ±5% 1/16W |
| R807L, R | 0700054 | CF 10KΩ ±5% 1/16W |
| R808L, R | 0700053 | CF 8.2KΩ ±5% 1/16W |
| R809L, R | 0700053 | CF 8.2KΩ ±5% 1/16W |
| R810L, R | 0700053 | CF 8.2KΩ ±5% 1/16W |
| R811L, R | 0700051 | CF 5.6KΩ ±5% 1/16W |
| R812L, R | 0700051 | CF 5.6KΩ ±5% 1/16W |
| R813L, R | 0700051 | CF 5.6KΩ ±5% 1/16W |
| R814L, R | 0700053 | CF 8.2KΩ ±5% 1/16W |
| R815L, R | 0700079 | CF 820KΩ ±5% 1/16W |
| R816L, R | 0700049 | CF 4.7KΩ ±5% 1/16W |
| R835 | 0700038 | CF 680Ω ±5% 1/16W |
| R837L, R | 0700048 | CF 3.9KΩ ±5% 1/16W |
| R838L, R | 0700044 | CF 1.8KΩ ±5% 1/16W |
| R839 | 0700032 | CF 220Ω ±5% 1/16W |
| R840L, R | 0700056 | CF 15KΩ ±5% 1/16W |
| R843L, R | 0700037 | CF 560Ω ±5% 1/16W |
| R902 | 0119412 | MF 82KΩ ±10% 1W |
| R911 | 0700061 | CF 33KΩ ±5% 1/16W |
| R912 | 0700061 | CF 33KΩ ±5% 1/16W |
| R913 | 0700049 | CF 4.7KΩ ±5% 1/16W |
| | ICS; | |
| IC201 | 2385323 | IC TA8167N |
| IC401 | 23011912 | IC TA7784P |
| IC501 | 23008722 | IC μPC1335V |
| | TRANSISTORS; | |
| Q161 | 2319083 | TR HIT9011GH [for E, E(BS)] |
| Q402L, R | 2329453 | TR 2SC945P |
| Q403L, R | 2329453 | TR 2SC945P |
| Q404 | 23280832 | TR 2SA844E |
| Q407 | 2329453 | TR 2SC945P |
| Q408 | 2329453 | TR 2SC945P |
| Q409 | 2319091 | TR HIT9014N (C) |
| Q410L, R | 2329453 | TR 2SC945P |
| Q412 | 2317782 | TR 2SC2235 (Y) |
| Q413L, R | 2329453 | TR 2SC945P |
| Q414 | 2319052 | TR HIT8050C |
| Q415 | 2329453 | TR 2SC945P |
| Q501 | 2318433 | TR 2SD2061 (F) |
| Q502 | 2318433 | TR 2SD2061 (F) |
| Q503 | 23280832 | TR 2SA844E |
| Q504 | 2329453 | TR 2SC945P |
| Q801L, R | 2329453 | TR 2SC945P |
| | DIODES; | |
| D201 | 2398921 | DI 1N4531T |
| D202 | 2398921 | DI 1N4531T |
| D251 | 23380312 | DI 1S2790 |
| D401 | 2398921 | DI 1N4531T |
| D402 | 2398921 | DI 1N4531T |
| D403 | 2398921 | DI 1N4531T |
| D409 | 2398921 | DI 1N4531T |

| SYMBOL NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| D501 | 23375552 | DI HZ11B-2 |
| D502 | 23375692 | DI HZ12C-3 |
| D504 | 23375552 | DI HZ11B-2 |
| D601 | 2398823 | DI RL253 |
| D602 | 2398823 | DI RL253 |
| D603 | 2398823 | DI RL253 |
| D604 | 2398823 | DI RL253 |
| D902 | 23375172 | DI HZ6C-1 |
| D910 | 2398921 | DI 1N4531T |
| D911 | 2398921 | DI 1N4531T |
| D912 | 2398921 | DI 1N4531T |
| D913 | 2398921 | DI 1N4531T |
| LED826 | 2397311 | LED TLR-208 |
| LED827 | 2397311 | LED TLR-208 |
| | VARIABLE CAPACITOR; | |
| CV101 | 0282402 | VARIABLE CAPACITOR |
| | VARIABLE RESISTORS; | |
| RT251 | 0189332 | VR 10KΩ |
| RT501 | 0158923 | VR 2KΩ |
| RV401 | 0166945 | VR 50KΩ |
| RV403 | 0159941 | VR 10KΩ |
| RV801 | 0189121 | VR 100KΩ |
| RV802 | 0189121 | VR 100KΩ |
| RV803 | 0189121 | VR 100KΩ |
| RV804 | 0189121 | VR 100KΩ |
| RV805 | 0189121 | VR 100KΩ |
| RV806 | 0189122 | VR 50KΩ |
| | TRANSFORMERS; | |
| T201 | 2154962 | FM IF TRANSFORMER |
| T202 | 2137871 | AM IF TRANSFORMER |
| T203 | 2154961 | FM IF TRANSFORMER |
| T401 | 2136823 | BIAS OSC COIL (85kHz) |
| | FUSES; | |
| ⚠ F601 | 2727725 | FUSE (4A, 250V) |
| ⚠ F602 | 2728072 | FUSE (630mA) |
| | COILS; | |
| L101 | 2138084 | FM RF COIL |
| L102 | 2138081 | FM OSC COIL |
| L151 | 2137662 | SW ANT COIL [for E, E(BS)] |
| L151 | 2137667 | ANTENNA COIL [except E, E(BS)] |
| L154 | 2137632 | LW OSC COIL [for E, E(BS)] |
| L154 | 2137631 | MW OSC COIL [except E, E(BS)] |
| L155 | 2137631 | MW OSC COIL [for E, E(BS)] |
| L155 | 2137633 | SW OSC COIL [except E, E(BS)] |
| L156 | 2137671 | SW OSC COIL [for E, E(BS)] |
| L156 | 2137672 | SW OSC COIL [except E, E(BS)] |
| L160 | 2137684 | CHOKE COIL 0.45 MICRO H |
| L201 | 2227922 | CHOKE COIL 22 MICRO H |
| L202 | 2227721 | FM TRAP COIL |
| L401L, R | 2227991 | CHOKE COIL 3.3 MICRO H |
| L402L, R | 2228611 | CHOKE COIL 33 MICRO H |

| SYMBOL NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | | MISCELLANEOUS; |
| BPF201 | 2137193 | FM BAND PASS FILTER |
| CF201 | 2155491 | CERAMIC FILTER [for E, E(BS)] |
| CF201 | 2155492 | CERAMIC FILTER [except E, E(BS)] |
| CF202 | 2135321 | CERAMIC FILTER |
| CT152 | 0283113 | CAPACITOR VARIABLE [for E, E(BS)] |
| CT152 | 0283557 | TRIMMER |
| CT153 | 0282148 | CAPACITOR SEMI VARIABLE [for E, E(BS)] |
| CT154 | 0282148 | CAPACITOR SEMI VARIABLE |
| CT156 | 0283113 | CAPACITOR VARIABLE |
| S201 | 2628551 | SLIDE SWITCH |
| S401 | 2628001 | SWITCH, LEVER |
| S402 | 2629296 | SW-SL9-2 |
| S403 | 2628486 | LEVER SWITCH |
| S404 | 2628485 | LEVER SWITCH |
| ⚠ S501 | 2600153 | POWER SWITCH |
| S601 | 2618472 | SWITCH [for W, W(UN), W(AU)] |
| E601 | 2727832 | FUSE HOLDER |
| JK401 | 2679371 | 3.5 JACK |
| JK402 | 2678152 | 2P PIN JACK |
| JK501 | 2678761 | STEREO JACK |
| JK502 | 2689551 | 4P PUSH TERMINAL |
| ⚠ JK601 | 26592742 | 2P SOCKET [for H, HC] |
| ⚠ JK601 | 26592712 | 2P SOCKET [except H, HC] |
| ⚠ JK602 | 2678881 | DC JACK [for E, E(BS)] |
| ⚠ JK602 | 2678882 | DC JACK [for W, W(UN), W(AU)] |
| L152 | 2757993 | FERRITE ANTENNA [forE, E(BS)] |
| L152 | 2757981 | FERRITE ANTENNA [except E, E(BS)] |
| | 8671408 | DT BIND HEAD SCREW (3x8) |
| | 3814881 | LED SPACER |
| ⚠ PT601 | 2249814 | POWER TRANSFORMER (1.12KG 42.9VA) [for H, HC] |
| ⚠ PT601 | 2249811 | POWER TRANSFORMER (1.12KG 42.9VA) [for E] |
| ⚠ PT601 | 2249812 | POWER TRANSFORMER (1.12KG 42.9VA) [for E(BS)] |
| ⚠ PT601 | 2249813 | POWER TRANSFORMER (1.12KG 42.9VA) [for W, W(UN), W(AU)] |
| | | CABINET CHASSIS |
| 1 | 3238141 | FRONT CASE SASS [for H, HC] |
| | 3238142 | FRONT CASE SASS [for E, E(BS)] |
| | 3238143 | FRONT CASE SASS [for W, W(UN), W(AU)] |
| 2 | 3814711 | REAR CASE SASS [for H] |
| | 3814712 | REAR CASE SASS [for HC] |
| | 3814713 | REAR CASE SASS [for E] |
| | 3814714 | REAR CASE SASS [for E(BS)] |
| | 3814715 | REAR CASE SASS [for W] |
| | 3814716 | REAR CASE SASS [for W(UN)] |
| | 3814717 | REAR CASE SASS [for W(AU)] |
| 3 | 3309431 | KNOB P |
| 4 | 3809771 | P ARM |
| 5 | 3367142 | SPRING |
| 6 | 3309421 | SNAP KNOB |
| 7 | 4436664 | TERMINAL |

| SYMBOL NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 8 | 4436663 | TERMINAL |
| 9 | 3367065 | SPRING |
| 10 | 3367064 | SPRING |
| 11 | 3950093 | BATTERY COVER |
| 12 | 4480741 | ANT TERMINAL |
| 13 | 4480771 | ANT SPRING |
| 14 | 3340322 | SPRING M |
| 15 | 3975431 | POINTER |
| 16 | 3295294 | TUN KNOB |
| 17 | 3340312 | SPRING WASHER |
| 18 | 3309391 | BAND KNOB |
| 19 | 2757901 | ROD ANTENNA |
| 20 | 0711306 | SCREW, PAN HAND 2.6x6 |
| 21 | 3950381 | DAMPER ASSY |
| 22 | 3368685 | EJECT SPRING |
| 23 | 2589541 | TN-521Z MECHA |
| 24 | 4480761 | REC LEVER |
| 25 | 3809781 | SPEAKER BOX |
| 26 | 2404142 | SPEAKER 16 |
| 27 | 2404232 | TWEETER 5 |
| 28 | 3238152 | BUFFLE PANEL TAS |
| 29 | 4578972 | BT FLANGE SCREW, (3x10) |
| 30 | 3810844 | CASSETTE DOOR L SASS |
| 31 | 3810843 | CASSETTE DOOR R SASS |
| 32 | 3309411 | VOL. KNOB |
| 33 | 4006751 | HANDLE ASSY |
| 34 | 3800862 | KNOB |
| 35 | 8741104 | 2x4 B.H. SCREW |
| 36 | 3309451 | CASSETTE BUTTON |
| 37 | 26679222 | SIEMEN PLUG [for W, W(UN)] |
| 38 | 4006761 | DIAL HOLDER SUB ASSY |
| 39 | 3975391 | PULLEY |
| 40 | 3814541 | GE PIECE |
| 41 | 3934271 | ROLLER |
| 42 | 4577661 | ROLLER PIN |
| 43 | 4583855 | RIBET (2X7) |
| 44 | 4006771 | TUNING KNOB TAS |
| 45 | 3812852 | INSULATOR RING |
| ⚠ 46 | 2706591 | AC POWER CORD [for H] |
| ⚠ | 2713141 | AC POWER CORD [for H(C)] |
| ⚠ | 2705942 | AC POWER CORD [for E] |
| ⚠ | 2717901 | AC POWER CORD [for E(BS)] |
| ⚠ | 2706242 | AC POWER CORD [for W, W(UN)] |
| ⚠ | 2713261 | AC POWER CORD [for W(AU)] |
| 100 | 4577817 | 3x30 BT SCREW (SP. BOX x 4) |
| 101 | 8815111 | LOCK WASHER |
| 102 | 48190682 | M2x4 SCREW (COUNTER BRACKET x 1) |
| 103 | 8691410 | 3x10 BT SCREW (ANT SPRING 1) |
| 104 | 4583881 | 3x12 BT SCREW (3x12) |
| 105 | 8744412 | 3x12 BIND HEAD SCREW (ANT. 1) |
| 106 | 4578976 | 3x20 BT SCREW (TRANSFORMER 4) |
| 107 | 8691412 | 3x12 BT SCREW (DAMPER 2) |
| 108 | 4833465 | SCREW (A) (REC. LEVER 1) |
| 109 | 8699412 | 3x12 BT SCREW B (MECHA 6) |
| 110 | 8699410 | 3x10 BT SCREW B (PWB 2) |
| 111 | 4577816 | 3x20 BT SCREW (REAR CASE 5) (HEAT SINK 1, DIAL HOLDER 1) |
| 112 | 8691408 | 3x8 BT SCREW (COUNTER BRACKET 1) |
| 113 | 8699408 | 3x8 BT SCREW B (LINE IN 1) |
| 114 | 4481572 | RECORD PLATE |
| 115 | 4477482 | SHIELD PLATE |

| SYMBOL NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| | | CASSETTE CHASSIS |
| 2 | 48191312 | PAUSE LEVER |
| 3 | 48191322 | PAUSE LEVER SPRING |
| 4 | 4842395 | PACK SPRING PLATE |
| 5 | 4853652 | AUTO LEVER (F) |
| 6 | 4853653 | AUTO LEVER (F) SPRING |
| 7 | 4853654 | SPRING STOPPER |
| 8 | 4853655 | AUTO LEVER (R) |
| 9 | 4853656 | AUTO LEVER (R) SPRING |
| 10 | 4856321 | EJECT SLIDE LEVER (1851-17-03) |
| 11 | 4853658 | EJECT SLIDE LEVER SPRING |
| 12 | 4833465 | SPECIAL SCREW |
| 13 | 4853659 | SUB CHASSIS ASSY |
| 14 | 4853650 | TURN OVER ARM |
| 15 | 4853661 | TURN OVER SPRING |
| 16 | 4853662 | BUTTON BASE ASSY |
| 17 | 4853663 | T GEAR ARM (F) ASSY |
| 18 | 4853664 | T GEAR ARM (F) SPRING |
| 19 | 4853665 | T-CAM GEAR (F) |
| 20 | 4853666 | T GEAR ARM (R) ASSY |
| 21 | 4853667 | T GEAR ARM (R) SPRING |
| 22 | 4853668 | T-CAM GEAR (R) |
| 23 | 4853669 | SLIDE PLATE |
| 24 | 4853660 | LOCK ACTUATOR ASSY |
| 25 | 4853671 | LOCK RELEASE SPRING |
| 26 | 4853672 | SW ACTUATOR ASSY |
| 27 | 4856322 | MODE BUTTON ASSY |
| 28 | 4853674 | BUTTON LEVER SPRING |
| 29 | 4853675 | PLAY BUTTON LEVER |
| 30 | 4853676 | FF BUTTON LEVER R (S) |
| 31 | 4853677 | FF BUTTON LEVER SPRING |
| 32 | 4853678 | FF BUTTON LEVER F (S) |
| 33 | 4853679 | STOP BUTTON LEVER (S) |
| 34 | 4853670 | PROGRAM BUTTON LEVER (S) |
| 35 | 4853681 | PULL ARM SPRING |
| 36 | 4853682 | STOP BUTTON LEVER SPRING |
| 37 | 4853683 | RELAY PLATE |
| 38 | 4853684 | FF SW PLATE |
| 39 | 4853685 | R.C. SPRING |
| 40 | 4853686 | AUTO CONTROL ARM (F) |
| 41 | 4853687 | CONTROL COLLAR |
| 42 | 4853688 | AUTO CONTROL ARM (R) |
| 43 | 4853689 | HEAD PANEL |
| 44 | 4853680 | R.C. PLATE |
| 45 | 4853691 | R.C. PLATE SPRING |
| 46 | 4853692 | H.P. COLLAR |
| 47 | 4853693 | TAPE GUIDE |
| 48 | 4853694 | HEAD SPRING PLATE |
| 49 | 8513372 | P. HEAD P-5244BA-5487 |
| 50 | 4842401 | SLIDE SWITCH |
| 51 | 4853696 | SWITCH BRACKET |
| 52 | 4853697 | PINCH ROLLER SPRING (F) |
| 53 | 4853698 | PINCH ROLLER SPRING (R) |
| 54 | 4853699 | PINCH ROLLER (F) ASSY |
| 55 | 4853690 | PINCH ROLLER (R) ASSY |
| 56 | 4853701 | REEL PLATE ASSY |
| 57 | 4853702 | REEL ASSY |
| 58 | 8501741 | LEAF SWITCH MSW-1290CV |
| 59 | 48191962 | E RING |
| 60 | 4853704 | FF GEAR ARM (F) ASSY |
| 61 | 4853705 | FF GEAR |
| 62 | 4853706 | FF GEAR ARM (R) ASSY |
| 63 | 4853707 | FF GEAR ARM COLLAR |
| 64 | 4853708 | FF GEAR ARM SPRING (F) |
| 65 | 4853709 | FLYWHEEL ASSY |
| 66 | 4853700 | MAIN BELT |
| 67 | 4853711 | MOTOR BRACKET |
| 68 | 4853712 | P KICK LEVER |
| 69 | 4833463 | LEVER |
| 70 | 4833466 | SPECIAL SCREW |
| 71 | 4842404 | MOTOR RUBBER |
| 72 | 8511951 | M. COLLER SCREW |
| 73 | 4856324 | FELT (1821-12-109) |
| 74 | 8513377 | MOTOR PASS |
| 76 | 4853715 | P KICK LEVER SPRING |
| 77 | 4842425 | PAUSE PROTECT BRACKET |
| 80 | 4853716 | LOCK ACTUATOR SPRING |
| 81 | 4853717 | SW ACTUATOR SPRING |
| 82 | 8501744 | P WASHER 1.75x4x0.3 |
| 83 | 4853719 | C TAPPING SCREW, (2x3) |
| 84 | 48191912 | TAPPING SCREW, (2x6) |
| 85 | 4842443 | WASHER (2.1) |
| 86 | 4853710 | TAMS SCREW, (2x6) |
| 87 | 4853721 | CAMERA S TAPPING SCREW, (1.7x4) |
| 88 | 4853722 | SCREW, (2x4.5) |
| 89 | 4842414 | WASHER (2) |
| 90 | 4842430 | WASHER (2.1) |
| 91 | 4853723 | WASHER (1.45) |
| 92 | 48190682 | TAPPING SCREW, (2x4) |
| 93 | 4842412 | CAMERA S TAPPING SCREW, (1.7x2.5) |
| 94 | 4842444 | WASHER (1.2) |
| 95 | 4853724 | CAMERA S TAPPING SCREW, (1.7X3) |
| 96 | 48190772 | WASHER (1.2) |
| 97 | 4853725 | WASHER (3) |
| 98 | 4853726 | CAMERA S TAPPING SCREW, (1.7x8) |
| 99 | 4856328 | M2x9 SCREW (9999-13-02) |
| 100 | 4856329 | M2x5 SCREW (9181-00-00) |
| 101 | 48189912 | MAIN BASE ASSY |
| 102 | 4853727 | SWITCH ACTUATOR |
| 103 | 4839371 | PUSH BUTTON ACTUATOR ASSY |
| 104 | 4823651 | REC BUTTON LEVER |
| 105 | 4823661 | PLAY BUTTON LEVER |
| 106 | 4823671 | RWD BUTTON LEVER |
| 107 | 4823681 | FF BUTTON LEVER |
| 108 | 4823691 | STOP BUTTON LEVER |
| 109 | 4823701 | PAUSE BUTTON LEVER ASSY |
| 110 | 48189902 | RWD LEVER |
| 111 | 48191312 | PAUSE LEVER |
| 112 | 48191322 | PAUSE LEVER SPRING |
| 113 | 48191332 | PAUSE STOPPER |
| 114 | 48191002 | BUTTON LEVER SPRING |
| 115 | 48202152 | SUB CHASSIS |
| 116 | 48190072 | BUTTON LEVER SPRING |
| 117 | 48202172 | PLAY BUTTON LEVER SPRING |
| 119 | 48190082 | ACTUATOR SPRING |
| 120 | 48190092 | AUTO LEVER |
| 121 | 48190002 | AUTO LEVER SPRING |
| 122 | 48202142 | BUTTON LEVER SPRING |
| 123 | 4856331 | LEAF SWITCH MSW-1541T |
| 124 | 8501749 | LEAF SWITCH MSW-1275 |
| 126 | 4856332 | HEAD PANEL (1829-03-04) |
| 128 | 4842423 | SENSING PLATE ASSY |
| 129 | 4832522 | SCREW |

| SYMBOL NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 130 | 48202212 | HEAD PANEL SPRING |
| 131 | 48190142 | HEAD BASE |
| 132 | 48190062 | PR STOPPER |
| 133 | 48190452 | SCREW |
| 134 | 48190172 | SPRING |
| 135 | 4839372 | PINCH ROLLER ARM ASSY |
| 136 | 4842424 | PINCH ROLLER SPRING |
| 137 | 4856333 | E.H. SPRING (1821-03-08) |
| 138 | 4831610 | METAL GUIDE |
| 139 | 4853728 | RF PULLEY ARM ASSY |
| 140 | 48202252 | RF PULLEY ARM SPRING |
| 141 | 48202262 | RF ARM COLLAR SCREW |
| 142 | 8513379 | RF BELT |
| 143 | 4853718 | MAIN BELT |
| 144 | 4850092 | FLYWHEEL ASSY |
| 145 | 4839376 | REEL BASE ASSY |
| 146 | 8513370 | T GEAR PLATE ASSY |
| 147 | 4839378 | TAKE UP ROLLER GEAR |
| 148 | 48190202 | TG PLATE SPRING |
| 149 | 4839379 | FF GEAR |
| 150 | 8513381 | BACK TENSION SPRING |
| 151 | 4842431 | S REEL ASSY |
| 152 | 4839381 | TAKE UP REEL ASSY |
| 153 | 4832421 | RECORD SAFETY LEVER |
| 154 | 4839382 | BACK TENSION SPRING |
| 156 | 4856324 | FELT (1821-12-109) |
| 158 | 48195352 | EJECT SLIDE LEVER |
| 159 | 48190442 | EJECT SLIDE LEVER SPRING |
| 160 | 4842433 | BRACKET |
| 162 | 8513383 | HEAD MS15R-AA2N1 |
| 163 | 8513384 | E HEAD LE15B-C1 |
| 165 | 48202182 | SWITCH ACTUATOR SPRING |
| 170 | 48191912 | TAPPING SCREW, (2x6) |
| 171 | 4842434 | CAMERA TAPPING SCREW, (2x3.5) |
| 184 | 48190782 | WASHER (1.55) |
| 187 | 48196072 | BIND TAPPING SCREW, (2x5) |
| 188 | 48195442 | CAP SCREW (2x8) |
| 189 | 48190602 | SCREW, (2X7) |
| 190 | 48196002 | AZIMUTH SCREW |
| 191 | 4832431 | TAPPING BIND SCREW, (2x4) |
| 192 | 4853731 | WASHER (1.2) |
| 193 | 48190722 | SCREW, (2x7) |
| 195 | 4853734 | FF CONTROL ARM |
| 196 | 8501740 | P WASHER |
| 198 | 4853732 | BUTTON LEVER SPRING (P) |
| 200 | 4853733 | RC ARM |
| 201 | 4831624 | BUTTON FLAME (S) (1821-31-06) |
| 202 | 8506761 | BUTTON LEVER SHAFT |
| 203 | 4856326 | BUTTON FLAME (S) (1851-31-01) |